DANIEL GUGGENHEIM SCHOOL
OF AERONAUTICS
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA

PROJECT A-523

WIND TUNNEL TESTS OF THE VERTOL ONE-EIGHTH SCALE MODEL V-107-11 HELICOPTER

Prepared by:

John J. Harper, Head
Nine-foot Wind Tunnel

George J. Smitses
Project Engineer

Approved by:

Thomas W. Jackson, Chief
Mechanical Sciences Division

Released by:

James E. Boyd, Director
Engineering Experiment Station

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DANIEL GUGGENHEIM SCHOOL
OF AERONAUTICS
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA

SUMMARY

Wind tunnel tests of the Vertol V-107-11 one-eighth scale model helicopter were conducted in the nine-foot tunnel of the Georgia Institute of Technology during the period September 20 - October 13, 1960.

The tests were run at a nominal q of 40 pounds per square foot, corresponding to an indicated speed of 125 miles per hour. Test data are presented in tabular and graphical form; equivalent parasite areas (D/q, L/q, etc.) are plotted versus either angle of attack or angle of yaw.

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DESCRIPTION OF MODEL AND TESTS

The test model was a one-eighth scale model of the Vertol V-107-11 helicopter, but without rotor blades; some runs included the effect of the rotor hubs, however.

The model was equipped with its own internal pitching mechanism and was mounted on a single support. Figure 1 is a photograph of the basic set-up.

Both force and pressure data were taken. The force data were obtained from the balance of the Georgia Institute of Technology nine-foot wind tunnel at an indicated airspeed of 125 miles per hour. Pressure data were obtained from transducers located in the model and recorded on chart recorders supplied by Vertol. A tuft grid behind the model was photographed in some phases of the test program.

Both pitch runs and yaw runs were made with six component data being recorded, except for some few runs for which the roll beam was out of action.

It is noted that for the pitch runs lift and drag only were plotted.

Tare and interference runs with image support system in were made during the course of the test program; gravity variations were also determined and included in the data work-up.

For convenience, a configuration list and a run list are included.

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REDUCTION OF DATA

All data have been cleared of tares, gravity variations, blocking, and horizontal buoyancy. The data reduction equations are tabulated in the following paragraphs.

Blocking: blocking corrections were applied using the short, approximate form (ref. 1).

$$\epsilon = \frac{\text{Model + Windshield Frontal Area}}{4\ (\text{Test Section Area})}$$

from which

$$\epsilon = \frac{1.453 + 2.725}{(4)(63.6)} = \frac{4.178}{254.4} = .0164$$

and

$$q_b = q(1 + 2\epsilon)$$
$$= 40(1 + .0328) = 41.312 \text{ psf} \quad \text{(Image System Out)}$$

Similarly $q_b = 42.168$ psf (Image System In)

All pitch-run data are about the wind system of axes. Yaw data were transferred to the body system of axes.

Since all runs did not have tare and interference taken out, it is convenient to break the data reduction procedure into three groups. Group I (Runs 12-53, 61 & 62) has no wall, alignment, T & I corrections

and the reduction equations become (wind system of axes):

A. Forces and moment (three-component data)

$L = L_u$

$D = D_u - \Delta D_{Buoy.}$

where $\Delta D_{Buoy.} = .403$ lbs. (taken constant)

Subscript "u" denotes uncorrected data

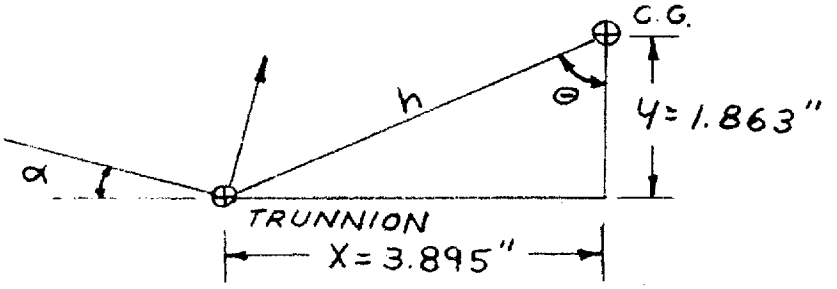
$\alpha = \alpha_u$

$M = M_u + 6.4\, D_u - \Delta M_{GR.}$

where $6.4\, D_u$ represents the drag-pitch interaction; gravity variations are tabulated in Tables 1 through 10. Gravity values actually used are faired values taken from plotted data.

B. Transfer of forces and moments from trunnion to C.G.

The trunnion - C.G. geometry is shown in the sketch below:



$h = \sqrt{3.895^2 + 1.863^2} = 4.318" = .360$ ft.

$\theta = \tan^{-1} \frac{3.895}{1.863} = 64.437°$

The transfer equation for the moment becomes

$M_{C.G.} = M_{TR} + .360\ L \sin(\theta + \alpha) - .360\ D \cos(\theta + \alpha)$ Ref. 2

C. Finally

$$L/q = K_1 L$$

$$D/q = K_1 D$$

$$M/q = K_1 M_{C.G.}$$

where $K_1 = 1/q_b = .0242$

Group I runs are for model inverted.

Group II (Runs 63, 64, 65, 74, 75, 76) includes six-component data and T & I corrections. This group is likewise referred to the wind system of axes.

A. Forces and moments (Six-component data)

$$L = L_u - \Delta L_{T \& I}$$

$$D = D_u - \Delta D_{T \& I} - \Delta D_{Buoy.}$$

$$M = M_u - \Delta M_{T \& I} - \Delta M_{GR.} - 6.4(D_u - \Delta D_{T \& I})$$

$$Y = Y_u - \Delta Y_{T \& I}$$

$$n = n_u - \Delta n_{T \& I}$$

$$\Omega = \Omega_u - \Delta \Omega_{T \& I}$$

$$\alpha = \alpha_u$$

It is noted here that the model was upright for this group of runs.

B. The moment transfer equations from trunnion to C.G. are:

$$M_{C.G.} = M_{TR} + .360\, L \sin(\theta + \alpha) - .360\, D \cos(\theta + \alpha)$$

$$n_{C.G.} = n_{TR} + .360\, Y \sin(\theta + \alpha)$$

$$\Omega_{C.G.} = \Omega_{TR} - .360\, Y \cos(\theta + \alpha)$$

C. Equivalent parasite areas or moment areas become

$$L/q = K_1 L$$

$$D/q = K_1 D$$

$$M/q = K_1 M$$

$$Y/q = K_1 Y$$

$$n/q = K_1 n$$

$$\Omega/q = K_1 \Omega$$

T & I values are presented in Table 11. Faired values were used in data reduction.

The runs in Group III are the yaw runs made at (model upright)

$\alpha = -1.3°$ (Runs 66 A & B, 68 A & B, 70 A & B, 72 A & B, 77 B, 79, 81 A & B, 83 A, 84 A & B, 86, 90, 93, 95, 96, 97)

and

$\alpha = 20°$ (Runs 67 A, C & D, 69 A & B, 71 A & B, 78 A, B & C, 80, 82, 83 B, 85 A & B, 89, 91, 94)

The tare and interference values for Group III runs are presented in Table 12, where again faired values have been used in data reduction.

A. Forces and moments (Six-component data)

$$L = L_u - \Delta L_{T \& I}$$

$$D = D_u - \Delta D_{T \& I} - \Delta D_{Buoy.}$$

$$M = M_u - \Delta M_{GR.} - \Delta M_{T \& I} - 6.4 (D_u - \Delta D_{T \& I})$$

$$Y = Y_u - \Delta Y_{T \& I}$$

$$n = n_u - \Delta n_{T \& I}$$

$$\Omega = \Omega_u - \Delta \Omega_{GR.} - \Delta \Omega_{T \& I}$$

$$\alpha = \alpha_u \, , \; \psi = \psi_u$$

B. Transfer from trunnion to C.G. - wind system of axes

$$M_{C.G.} = M_{TR} + .360\ L \sin(\theta + \alpha) \cos\psi - .360\ D \cos(\theta + \alpha)$$

$$n_{C.G.} = n_{TR} + .360\ Y \sin(\theta + \alpha) \cos\psi + .360\ D \sin(\theta + \alpha) \sin\psi$$

$$\Omega_{C.G.} = \Omega_{TR} - .360\ Y \cos(\theta + \alpha) - .360\ L \sin(\theta + \alpha) \sin\psi$$

C. Transfer from wind to body axes

$$L_B = L \cos\alpha + D \sin\alpha \cos\psi - Y \sin\alpha \sin\psi$$

$$D_B = -L \sin\alpha + D \cos\alpha \cos\psi - Y \cos\alpha \sin\psi$$

$$M_B = M \cos\psi - \Omega \sin\psi$$

$$Y_B = D \sin\psi + Y \cos\psi$$

$$n_B = n \cos\alpha + \Omega \sin\alpha \cos\psi + M \sin\alpha \sin\psi$$

$$\Omega_B = \Omega \cos\alpha \cos\psi + M \cos\alpha \sin\psi - n \sin\alpha$$

D. Equivalent parasite areas

$$L_B/q = K_1 L_B$$

$$D_B/q = K_1 D_B$$

$$M_B/q = K_1 M_B$$

$$Y_B/q = K_1 Y_B$$

$$n_B/q = K_1 n_B$$

$$\Omega_B/q = K_1 \Omega_B$$

No wall effects have been applied to the data because this effect was negligible. No alignment runs were made, hence there are no alignment corrections applied.

RESULTS

The results of this program are presented both in tabular and graphical form. Plotted data are shown in Figures 2 through 25. It should be noted that all data presented herein applies to model scale and not to full scale.

The average nominal effective Reynolds number per foot based on $t = 104°F$, $P = 29.06"$ Hg., and a turbulence factor of 1.2 was 1.241×10^6.

REFERENCES

1. A. Y. Pope, Wind Tunnel Testing, John Wiley & Sons, Inc., 1954.

2. W. S. Sekscienski, University of Maryland Wind Tunnel Users' Manual, Wind Tunnel Department, University of Maryland, 1955.

CONFIGURATION LIST

I F S G P Basic configuration with the cross bleed closed

where

F Fuselage

S Standard Stubs

G Standard Gear

P Pylon in Basic Configuration

II

A_1 Increased area aft of pylon

A_2 Extended trailing edge aft of pylon

B_1 Long blisters

B_2 Short blisters

$(CBO)_1$ Forward cross bleed open

$(CBO)_2$ Middle cross bleed open

$(CBO)_3$ Aft cross bleed open

E_1 23" extension

E_2 Tapered extension

E_3 Round extension

E_4 Twisted and tapered extension

F_1 Rainshield fairing aft of pylon

F_2 Rooftop fairing aft of pylon

G_1 Inboard landing gear

G_2 Outboard landing gear

G_3 Filleted landing gear

P_1 Symmetrical pylon
where i : Incidence of pylon

S_1 + 3° stubs

S_2 0° stubs

S_3 - 3° stubs

(S.F.) Split flaps
where δ_F : Flap deflection

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OF AERONAUTICS
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA

RUN LIST

Run No.	Configuration	Attitudes	Remarks	Applicable Gravity Run
12	$FSGPE_4$	$\psi = 0$, α: - 20 to + 20	Model Inverted	105
13	FSGP	$\psi = 0$, α: - 20 to + 20		104
14	$FSGPE_1$	$\psi = 0$, α: - 20 to + 20		105
15	$FSGPE_2$	$\psi = 0$, α: - 20 to + 20		
16	FSP	$\psi = 0$, α: - 20 to + 20		
17	$FSPE_1$	$\psi = 0$, α: - 20 to + 20		
19	FGP	$\psi = 0$, α: - 20 to + 20		106
21	FS_1GP	$\psi = 0$, α: - 20 to + 20		104
24	FS_1GPE_1	$\psi = 0$, α: - 20 to 7.5°		105
25	FS_2GP	$\psi = 0$, α: - 20 to 7.5°		104
26	FS_2GPE_1	$\psi = 0$, α: - 20 to 7.5°		105
27	FS_3GP	$\psi = 0$, α: - 20 to 7.5°		104
28	FS_3GPE_1	$\psi = 0$, α: - 20 to 7.5°		105

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OF AERONAUTICS
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RUN LIST (cont'd)

Run No.	Configuration	Attitudes	Remarks	Applicable Gravity Run
35	$FSPE_2$	$\psi = 0$, α: - 20 to 7.5°	Model Inverted	105
36	FSG_3PE_3	$\psi = 0$, α: - 20 to 7.5°		
38	$FSPE_3$	$\psi = 0$, α: - 20 to 7.5°		
40	FSG_3PE_1	$\psi = 0$, α: - 20 to 7.5°		
41	FSG_3P	$\psi = 0$, α: - 20 to 7.5°		104
44 A	FSGP	$\psi = 0$, α: - 20 to 7.5°		
44 B	FSGP	$\psi = 0$, α: + 7.5° to 20°		
47	$FSGPE_3$	$\psi = 0$, α: - 20 to 7.5°		105
49 A	$FSPE_1$	$\psi = 0$, α: - 20 to 0		
49 B	$FSPE_1$	$\psi = 0$, α: 0 to 7.5°		
51 A	FSG_1PB_1	$\psi = 0$, α: - 20 to 7.5°		108
52	FSG_1PB_2	$\psi = 0$, α: - 20 to + 20		107
53	FSG_2PB_2	$\psi = 0$, α: - 20 to + 20		
54 A & A'	FSGP	$\alpha = -1.3°$, ψ: 0 to - 30°		102

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RUN LIST (cont'd)

Run No.	Configuration	Attitudes	Remarks	Applicable Gravity Run
54 B	FSGP	α = + 20, ψ: 0 to - 30°	Model Inverted	103
54 C		α = + 20, ψ: 0 to + 30°		
54 D		α = - 1.3°, ψ: 0 to + 30°		102
55 B		ψ = 0, α: - 20 to + 20	Model Inverted; Image System In	104
55 C'		α = - 1.3°, ψ: 0 to + 30		102
55 D		α = 20°, ψ: 0 to + 30°		103
55 E		α = 20°, ψ: 0 to - 30		
55 F		α = - 1.3°, ψ: 0 to - 30		102
56	FSP	ψ = 0, α: + 20 to - 20		104
57	$FSGPE_1$			105
58	$FSPE_1$			
59	FGP			106
61	FSG_2PE_1		Model Inverted	105

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RUN LIST (cont'd)

Run No.	Configuration	Attitudes	Remarks	Applicable Gravity Run
62	FSG_1PE_1	$\psi = 0$, α: + 20 to - 20	Model Inverted	105
63	FGP		Model Upright	106
64	FSP			104
65	$FSGP(CBO)_2$			
66 A		$\alpha = -1.3°$, ψ: 0 to + 30		102
66 B		$\alpha = -1.3°$, ψ: 0 to - 30		
67 A		$\alpha = +20$, ψ: 0 to + 30		103
67 C, D		$\alpha = 20$, ψ: 0 to - 30		
68 A	FSGP	$\alpha = -1.3$, ψ: 0 to + 30		102
68 B		$\alpha = -1.3°$, ψ: 0 to - 30		
69 A		$\alpha = +20$, ψ: 0 to + 30		103
69 B		$\alpha = +20$, ψ: 0 to - 30		
70 A	$FSGP(CBO)_1$	$\alpha = -1.3$, ψ: 0 to 30		102
70 B		$\alpha = -1.3°$, ψ: 0 to - 30		

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RUN LIST (cont'd)

Run No.	Configuration	Attitudes	Remarks	Applicable Gravity Run
71 A	$FSGP(CBO)_1$	$\alpha = 20$, ψ: 0 to 30	Model Upright	103
71 B		$\alpha = 20$, ψ: 0 to - 30		
72 A	$FSGP(CBO)_3$	$\alpha = -1.3$, ψ: 0 to 30		102
72 B		$\alpha = -1.3$, ψ: 0 to - 30		
73 A		$\alpha = 20$, ψ: 0 to 30		103
73 B		$\alpha = 20$, ψ: 0 to - 30		
74	$FSGPF_1$	$\psi = 0$, α: + 20 to - 20		104
75	FSGP	$\psi = 0$, α: - 5 to + 2		
76	$FSGPF_2$	$\psi = 0$, α: + 20 to - 20		
77 B		$\alpha = -1.3$, ψ: - 30 to + 30		102
78 A, C		$\alpha = 20$, ψ: 0 to + 30		103
78 B		$\alpha = 20$, ψ: 0 to - 30		
79	FSGP(S.F.), $\delta_F = 15°$	$\alpha = -1.3$, ψ: 0 to ± 30		102
80		$\alpha = 20$ ψ: 0 to - 30		103

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RUN LIST (cont'd)

Run No.	Configuration	Attitudes	Remarks	Applicable Gravity Run
81 A	FSGP(S.F.), $\delta_F = 30°$	$\alpha = -1.3$, ψ: 0 to + 30	Model Upright	102
81 B	↓	$\alpha = -1.3$, ψ: 0 to + 30	↓	↓
82	↓	$\alpha = 20$, ψ: 0 to - 30	↓	103
83 A	FSGP(S.F.), $\delta_F = 60°$	$\alpha = -1.3$, ψ: 0 to - 30	↓	102
83 B	↓	$\alpha = 20$, ψ: 0 to - 30	↓	103
84 A	$FSGPA_1(CBO)_2$	$\alpha = -1.3$, ψ: 0 to 30	↓	87
84 B	↓	$\alpha = -1.3$, ψ: 0 to - 30	↓	↓
85 A	↓	$\alpha = 20$, ψ: 0 to 30	↓	88
85 B	↓	$\alpha = 20$, ψ: 0 to - 30	↓	↓
86	$FSGPA_1$	$\alpha = -1.3$, ψ: + 30 to - 30	↓	87
89	↓	$\alpha = 20$, ψ: + 30 to - 30	↓	88
90	$FSGPA_2$	$\alpha = -1.3$, ψ: 30 to - 30	↓	87
91	↓	$\alpha = 20$, ψ: + 30 to - 30	↓	88
93	$FSGP_1$, $i = 0°$	$\alpha = -1.3$, ψ: 30 to - 30	↓	102

RUN LIST (cont'd)

Run No.	Configuration	Attitudes	Remarks	Applicable Gravity Run
94	$FSGP_1$, i = 0°	α = 20, ψ : 30 to - 30	Model Upright	103
95	$FSGP_1$, i = 5°	α = - 1.3, ψ: 30 to - 30	↓	102
96	$FSGP_1$, i = 10°	α = - 1.3, ψ: 30 to - 30	↓	↓
97	$FSGP_1(CBO)_2$, i = 10°	α = - 1.3, ψ : 30 to - 30	↓	↓

GRAVITY RUNS

Run No.	Configuration	Attitudes	Remarks
G- 87	FSGP	α = - 1.3, ψ : 30 to - 30	Model Upright
G- 88	↓	α = + 20, ψ : 30 to - 30	↓
G- 92	$FSGPA_2$	α = - 1.3, ψ : 30 to - 30	↓
G-102	FSGP	α = - 1.3, ψ: 30 to - 30	↓
G-103	↓	α = + 20, ψ: 30 to - 30	↓
G-104	↓	ψ = 0, α: + 20 to - 20	↓
G-105	$FSGPE_1$	↓	↓
G-106	FGP	↓	↓
G-107	$FSGPB_2$	↓	↓
G-108	$FSGPB_1$	↓	↓

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LIST OF FIGURES (cont'd)

GEORGIA TECH WIND TUNNEL

PAGE

TEST FOR VERTOL

TABLE

MODEL DATA FROM FAIRED CURVES

RUN 88 and 87

WIND SPEED

RN_c

REPORT

S_{qb}

S_{qc}

MODEL CONFIGURATION FSGPA1 (α=-1.3, 87) (α=20°, 88)

TABLE 1

ψ°	M
+2	1.25
+4	3.75
+6	6.25
+8	8.75
+10	11.00
+12	13.50
+15	16.75
+20	22.5
+25	27.5
+30	32.5
0	-1.25
-2	-3.75
-4	-6.5
-6	-8.75
-8	-11.25
-10	-13.75
-12	-16.5
-15	-20.5
-20	-27.25
-25	-34.25
-30	-41.25

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR VERTOL TABLE

MODEL DATA FROM FAIRED CURVES RUN 87

WIND SPEED RN$_c$ REPORT

Sqb Sqc

MODEL CONFIGURATION FSGPA, $\alpha = -1.3°$

TABLE 2a

$\psi°$	Ω
+2	-1.5
+4	-3.1
+6	-5
+8	-7.7
+10	-10.3
+12	-12.8
+15	-16.5
+20	-22.6
+25	-29.6
+30	-37.0
0	+.2
-2	+2.2
-4	+4.5
-6	+6.6
-8	+8.4
-10	+9.9
-12	+11.3
-15	+13.4
-20	+16.5
-25	+19.6
-30	+22.5

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR VERTOL TABLE

MODEL DATA FROM FAIRED CURVES RUN 88

WIND SPEED RN_c REPORT

S_{qb} S_{qc}

MODEL CONFIGURATION $FSGPA_1$ $\alpha = 20°$

TABLE 2b

$\psi°$	S_2							
2	-1.5							
4	-2.9							
6	-4.8							
8	-7.2							
10	-10							
12	-12.4							
15	-16							
20	-21.7							
25	-28.4							
30	-35.8							
0	+.2							
-2	+2.3							
-4	+4.3							
-6	+5.9							
-8	+7.8							
-10	+9.3							
-12	+10.8							
-15	+12.6							
-20	+15.6							
-25	+12.5							
-30	+21.2							

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR VERTOL TABLE

MODEL DATA FROM FAIRED CURVES RUN 92

WIND SPEED RN$_c$ REPORT

Sqb Sqc

MODEL CONFIGURATION CHECK ON RUN 87 - FSGPA$_2$ - $\alpha = -1.3°$

TABLE 3

Ψ	M	Ω						
2	2.4	-1.2						
5	5.9	-4.3						
6	7.2	-4.9						
8	9.2	-7.8						
10	11.7	-10.4						
12	13.9	-12.7						
15	16.9	-16.6						
20	21.7	-22.4						
25	26.7	-30.2						
30	31.2	-37.1						
0	-1.4	0.6						
-2	-3.9	2.3						
-4	-6.2	4.1						
-5	-7.6	4.6						
-6	-8.6	6.4						
-8	-11.4	8.0						
-10	-13.8	9.1						
-12	-16.3	10.4						
-15	-20.6	12.3						
-20	-27.7	16.5						
-25	-34.7	19.7						
-30	-42.2	22.9						

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR VERTOL TABLE

MODEL DATA FROM FAIRED CURVES RUN 102 and 103

WIND SPEED RN$_c$ REPORT

Sqb Sqc

MODEL CONFIGURATION FSGP ($\alpha = -1.3°$, 102) ($\alpha = 20°$, 103)

TABLE 4

ψ	M							
2	+1.75							
4	+4.5							
6	+7.00							
8	+9.25							
10	+11.5							
15	+17.25							
20	+23.0							
25	+28.0							
30	+33.5							
0	-1.0							
-2	-3.75							
-4	-6.5							
-6	-9.0							
-8	-11.75							
-10	-14.5							
-15	-21.0							
-20	-27.75							
-25	-34.75							
-30	-42.25							

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR VERTOL TABLE

MODEL DATA FROM FAIRED CURVES RUN 102

WIND SPEED RN$_c$ REPORT

Sqb Sqc

MODEL CONFIGURATION FSGP ($\alpha = -1.3°$)

TABLE 5a

$\psi°$	Ω							
2	-1.0							
4	-3.0							
6	-5.0							
8	-7.0							
10	-9.6							
15	-15.7							
20	-22							
25	-29							
30	-36							
0	+1.0							
-2	+2.9							
-4	+4.8							
-6	+6.6							
-8	+8.1							
-10	+9.6							
-15	+13.0							
-20	+16.2							
-25	+19.2							
-30	+22							

GEORGIA TECH WIND TUNNEL

PAGE

TEST FOR VERTOL

TABLE

MODEL DATA FROM FAIRED CURVES

RUN 103

WIND SPEED

RN_c

REPORT

S_{qb}

S_{qc}

MODEL CONFIGURATION FSGP ($\alpha = 20°$)

TABLE 5b

$\psi°$	Ω
2	-1.2
4	-3.1
6	-5.2
8	-7.4
10	-9.6
15	-15.7
20	-22.0
25	-28.6
30	-35
0	+.5
-2	+2
-4	+4.0
-6	+5.6
-8	+7.1
-10	+8.6
-15	+11.8
-20	+14.8
-25	+17.3
-30	+19.3

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR Vertol TABLE

MODEL DATA FROM FAIRED CURVES RUN 104

WIND SPEED RN$_c$ REPORT

Sqb Sqc

MODEL CONFIGURATION FSGP ($\psi = 0$)

TABLE 6

$\alpha°$	M
-20	-4.1
-15	-2.5
-10	-1.35
-7.5	-.9
-5	-.6
-1.3	-.275
0	-.2
+2.5	-.175
+5	-.25
+7.5	-.5
+10	-.95
+15	-2.05
+20	-3.55

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR Vertol TABLE

MODEL DATA FROM FAIRED CURVES RUN 105

WIND SPEED RN$_c$ REPORT

Sqb Sqc

MODEL CONFIGURATION FSGPE, ($\psi = 0$)

TABLE 7

α°	M
-20°	-4.2
-15	-2.65
-10	-1.4
-7.5	-.9
-5	-.5
-2.5	-.25
-1.3	-.15
0	-.1
+2.5	-.15
+5	-.4
+7.5	-.75
+10	-1.2
+15	-2.35
+20	-3.9

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR VERTOL TABLE

MODEL DATA FROM FAIRED CURVES RUN 106

WIND SPEED RN$_c$ REPORT

Sqb Sqc

MODEL CONFIGURATION FGP ($\psi = 0$)

TABLE 8

α	M
-20	-4.2
-15	-2.6
-10	-1.35
-7.5	-0.85
-5	-0.45
-2.5	-0.15
-1.3	0
0	+0.05
2.5	0.1
5	0.1
7.5	0.1
10	0
15	-0.8
20	-2.0

GEORGIA TECH WIND TUNNEL

PAGE

TEST FOR VERTOL

TABLE 107

MODEL DATA FROM FAIRED CURVES

RUN

WIND SPEED

RN_c

REPORT

S_{qb}

S_{qc}

MODEL CONFIGURATION $FSGPB_2$ $(\psi = 0)$

TABLE 9

α°	M
-20°	-3.8
-15	-2.4
-10	-1.25
-7.5	-.80
-5	-.45
-2.5	-.225
-1.3	-.175
0	-.15
+2.5	-.175
+5.0	-.35
+7.5	-.6
+10	-1.0
+15	-2.1
+20	-3.5

GEORGIA TECH WIND TUNNEL PAGE

TEST FOR VERTOL TABLE

MODEL DATA FROM FAIRED CURVES RUN 108

WIND SPEED RN$_c$ REPORT

S_{qb} S_{qc}

MODEL CONFIGURATION FSGPB$_1$ ($\psi = 0$)

TABLE 10

α	M
-20	-3.1
-15	-1.75
-10	-.8
-7.5	-.45
-5	-0.2
-2.5	-0.075
-1.3	-0.05
0	0
2.5	-0.1
5	-0.3
7.5	-0.7
10	-1.15
15	-2.35
20	-4.1

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OF AERONAUTICS
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA

TABLE 11 a

PITCH TARE AND INTERFERENCE CORRECTIONS

α	$\Delta L_{T \& I}$	$\Delta D_{T \& I}$	$\Delta M_{T \& I}$	$\Delta Y_{T \& I}$	$\Delta N_{T \& I}$	$\Delta \Omega_{T \& I}$
- 20	- 1.30	1.75	4.6	3.7	1.9	- 1.0
- 15	- 1.65	2.10	4.5	3.7	0.6	1.2
- 10	- 1.30	2.25	4.4	3.3	1.2	3.0
- 7.5		2.05	4.3	3.3	1.5	3.5
- 5.0		1.75		3.5	1.2	3.6
- 4.0		1.55		3.6	1.0	3.4
- 3.0		1.32		3.7	0.9	3.1
- 2.5		1.25		3.8	0.9	2.9
- 1.3		1.10		3.7	1.8	2.6
0		1.00	4.4	3.5	1.9	2.5
+ 1.0		1.00	4.7	3.5	2.5	2.5
+ 2.0		1.00	5.1	3.3	2.8	2.5
2.5		1.00	5.3	3.2	2.7	2.5
5.0		.90	7.0	2.8	1.4	2.2
7.5	$\pm$ 1.45	.65	8.8	2.5	2.2	1.9
10.0	- 1.55	.30	9.6	2.3	5.4	1.7
15	- 1.35	0	9.5	1.8	8.6	1.7
20	- 1.15	.60	7.6	0.7	7.0	2.2

Data taken from Runs 55 B and 44 A & B. These values to be used with Runs: 65, 74, 75, & 76.

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TABLE 11 b

TARE AND INTERFERENCE CORRECTIONS

α	$\Delta L_{T \& I}$	$\Delta D_{T \& I}$	$\Delta M_{T \& I}$	$\Delta Y_{T \& I}$	$\Delta N_{T \& I}$	$\Delta \Omega_{T \& I}$
- 20	- 2.10	3.00	- 12.0	3.0	4.2	0.3
- 15	- 1.05	3.38	- 13.2	4.2	0.3	1.7
- 10	- 1.10	3.28	- 14.3	5.4	1.0	3.4
- 7.5	- 1.55	3.60	- 14.8	6.3	0.9	3.8
- 5	- 2.00	3.62	- 14.6	6.5	0.9	3.7
- 4	- 2.15	3.55	- 14.2	6.2	1.1	3.5
- 3	- 2.30	3.45	- 13.9	5.8	1.5	3.3
- 2.5	- 2.35	3.38	- 13.7	5.7	1.7	3.1
- 1.3	- 2.47	3.20	- 12.9	5.4	2.1	2.8
0	- 2.57	2.95	- 11.6	5.2	1.8	2.6
+ 1	- 2.62	2.78	- 10.5	5.0	2.2	2.5
2	- 2.65	2.60	- 9.5	4.8	2.9	2.3
2.5	- 2.63	2.54	- 9.0	4.7	3.4	2.3
5	- 2.42	2.10	- 7.0	4.4	5.1	2.1
7.5	- 2.00	1.65	- 6.0	4.2	5.8	1.9
10	- 1.55	1.28	- 5.5	4.2	↓	1.7
15	- 0.68	1.15	- 7.0	5.4		1.5
20	+ 0.20	1.55	- 8.3	5.4		2.0

Data taken from Runs 59 & 19. These values to be used with Run 63.

TABLE 11 c

TARE AND INTERFERENCE CORRECTIONS

α	$\Delta L_{T \& I}$	$\Delta D_{T \& I}$	$\Delta M_{T \& I}$	$\Delta Y_{T \& I}$	$\Delta N_{T \& I}$	$\Delta \Omega_{T \& I}$
- 20	4.0	3.6	- 2.8	2.5	7.5	- 2.4
- 15	3.2	3.8	- 13.6	6.5	1.8	0.4
- 10	3.0	3.7	- 16.1	7.7	- 2.1	2.7
- 7.5	3.0	3.4	- 15.9	8.7	- 3.5	3.4
- 5	2.8	2.9	- 13.8	8.7	- 4.0	3.4
- 4	2.5	2.7	- 13.0	8.2	- 3.8	3.2
- 3	2.1	2.6	- 12.3	7.8	- 3.4	2.8
- 2.5	2.0	2.5	- 12.0	7.6	- 3.1	2.6
- 1.3	1.5	2.4	- 11.5	7.2	- 2.0	2.2
0.0	1.2	2.3	- 11.2	7.0	- 0.8	2.5
+ 1	1.1	2.3	- 11.1	6.9	- 0.4	2.6
2	1.0	2.2	- 10.9	6.7	- 0.2	2.8
2.5	↓	2.1	- 10.8	6.7	0.0	2.8
5		1.9	- 10.4	6.1	2.3	2.4
7.5		1.8	- 10.0	5.4	4.5	1.9
10	1.4	1.8	- 9.0	4.9	6.6	1.8
15	2.0	1.6	- 6.2	4.2	10.0	2.0
20	0.0	1.1	- 5.2	4.8	6.3	2.5

Data taken from Runs 56 & 16. These values to be used with Run 64.

TABLE 12 a

YAW TARE AND INTERFERENCE CORRECTIONS

$\alpha = -1.3$

ψ	$\Delta L_{T \& I}$	$\Delta D_{T \& I}$	$\Delta M_{T \& I}$	$\Delta Y_{T \& I}$	$\Delta N_{T \& I}$	$\Delta \Omega_{T \& I}$
- 1	0.0	1.0	- 4.2	1.9	1.6	0.0
- 2			- 4.5	1.0	2.7	
- 3			- 4.8	0.0	3.1	
- 4			- 5.2	- .7	3.2	
- 5			- 5.5	- 1.5	3.0	
- 6			- 6.0	- 2.0	1.4	- .4
- 7			- 6.5	- 2.5	2.0	- .5
- 8			- 7.0	- 2.8	3.6	- .6
- 9			- 7.3	- 3.0	3.5	- .8
- 10		1.1	- 7.7	- 3.0	3.2	- 1.0
- 11	.1	1.1	- 7.6	- 3.1	2.8	- 1.2
- 12	.2	1.2	- 7.5	- 3.3	2.4	- 1.3
- 14	.4	1.4	- 7.2	- 3.5	1.6	- 1.4
- 15	.5	1.4	- 7.2	- 3.6	1.2	- 1.4
- 20	1.8	.7	- 5.8	- 3.7	- .8	- .7
- 25	.9	- 1.2	+ 9.0	- 3.6	- 3.8	+ .8
- 30	.7	- 1.8	+ 13.0	0.0	- 9.4	+ 1.3
0	0.0	1.0	- 4.1	3.0	+ .3	0.0
1			- 4.1	3.5	- .6	
2			- 4.1	4.0	0.0	
3			- 4.9	4.4	+ 1.8	
4			- 5.8	4.7	+ .9	
5		2.0	- 7.4	5.1	- 2.9	
6		1.3	- 8.5	5.5	- .5	
7		1.5	- 9.0	6.0	+ .3	
8		1.7	- 8.7	6.4	+ .9	

DANIEL GUGGENHEIM SCHOOL
OF AERONAUTICS
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA

TABLE 12 a (cont'd)

YAW TARE AND INTERFERENCE CORRECTIONS

$\alpha = -1.3$

ψ	$\Delta L_{T \& I}$	$\Delta D_{T \& I}$	$\Delta M_{T \& I}$	$\Delta Y_{T \& I}$	$\Delta N_{T \& I}$	$\Delta \Omega_{T \& I}$
9	0.0	1.8	- 8.5	6.7	1.2	+ .2
10	↓	1.8	- 8.0	7.1	1.5	.4
12	.6	2.0	- 8.5	7.7	1.9	.6
13	.9	2.0	- 9.3	8.0	1.7	.7
14	1.4	2.1	- 10.1	8.4	1.3	.8
15	1.8	2.2	- 11.0	8.6	.8	.9
17	2.7	2.4	- 12.7	9.2	.5	1.2
20	4.2	2.7	- 15.5	10.1	3.2	1.6
25	4.5	3.2	- 17.0	9.0	10.5	1.6
30	4.5	3.9	- 18.0	6.5	17.3	.8

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OF AERONAUTICS
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA

TABLE 12 b

YAW TARE AND INTERFERENCE CORRECTIONS

$\alpha = +20°$

ψ	$\Delta L_{T\ \&\ I}$	$\Delta D_{T\ \&\ I}$	$\Delta M_{T\ \&\ I}$	$\Delta Y_{T\ \&\ I}$	$\Delta N_{T\ \&\ I}$	$\Delta \Omega_{T\ \&\ I}$
0	.45	1.0	- 2.0	1.00	1.3	2.0
1	+ .25	1.0	- 2.1	.80	3.0	4.2
2	- 1.40	1.0	↓	.80	4.5	3.6
2.5	- 1.20	.8	↓	.82	4.6	3.6
3	- 1.00	.6	↓	.90	4.6	3.8
4	- .50	.4	- 1.8	1.14	4.5	4.3
5	- .42	.3	- 1.6	2.50	7.0	3.6
6	- .55	.2	- 1.9	2.00	8.0	5.3
6.5	0.0	.1	- 9.0	1.70	8.3	6.0
7	+ .60	0.0	- 8.0	1.30	8.5	6.3
8	+ .05	↓	- 5.0	.60	8.9	6.2
9	- .80	↓	0.0	- .05	9.2	6.1
10	- 1.70	↓	4.0	- .80	9.4	6.0
11	- 2.30	↓	6.0	- 1.60	9.9	6.1
12	- 2.70	↓	6.9	- 2.60	10.8	6.3
13	- 3.15	↓	8.1	- 3.50	12.1	6.8
14	- 3.55	↓	9.0	- 4.70	13.8	7.3
15	- 3.85	↓	10.0	- 5.70	16.0	8.0
17	- 4.30	↓	11.0	- 5.90	19.5	9.2
20	- 5.00	↓	12.0	- 9.60	22.0	10.9
25	- 6.05	↓	17.5	- 8.45	23.0	11.5
30	- 3.00	↓	21.0	- 7.60	21.5	11.0
- 1	+ 0.25	.7	0.0	1.75	1.4	1.8
- 2	0.0	.4	1.4	2.40	1.7	1.8
- 3	- .50	.2	1.5	2.90	2.2	2.7
- 4	- 1.00	0.0	2.0	3.16	3.0	3.4

DANIEL GUGGENHEIM SCHOOL
OF AERONAUTICS
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA

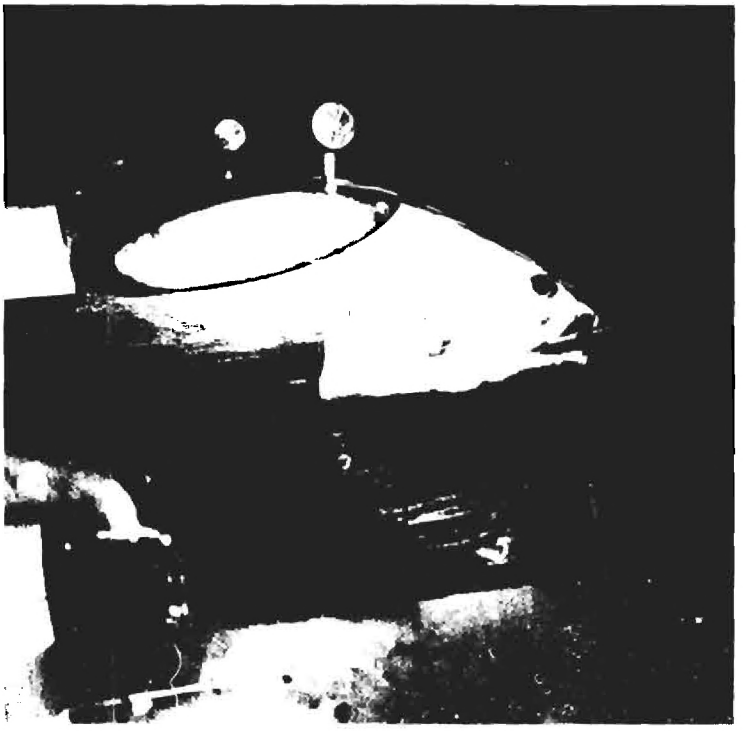
TABLE 12 b

YAW TARE AND INTERFERENCE CORRECTIONS

$\alpha = + 20°$

ψ	$\Delta L_{T \& I}$	$\Delta D_{T \& I}$	$\Delta M_{T \& I}$	$\Delta Y_{T \& I}$	$\Delta N_{T \& I}$	$\Delta \Omega_{T \& I}$
- 5	- 1.55	.1	2.0	3.20	2.0	3.2
- 6	- 1.75	- .1	2.3	3.00	+ .5	2.6
- 7	- 1.50	- 2.0	5.0	2.60	- 2.0	1166
- 8	- 3.00	- 1.9	7.8	2.40	- 4.5	.4
- 9	- 3.90	- 1.5	10.0	2.70	- 5.0	1.0
- 10	- 4.50	- 1.4	11.5	3.70	- 6.0	1.4
- 11	- 5.05	- 1.4	12.0	4.60	- 7.7	1.3
- 12	- 5.55	- 1.6	13.0	5.40	- 9.2	1.3
- 14	- 6.55	- 2.4	20.0	6.50	- 12.1	1.1
- 15	- 7.00	- 2.8	23.8	7.70	- 13.5	.9
- 20	- 8.50	- 4.8	39.6	11.70	- 18.9	.1
- 25	- 8.10	- 8.1	64.5	14.40	- 22.4	2.2
- 30	- 6.25	-16.1	159.1	18.00	- 22.7	8.0

(a) MODEL ON SINGLE SUPPORT



(b) VIEW OF TUFT GRID

Figure 1. Basic Tunnel Set-up.

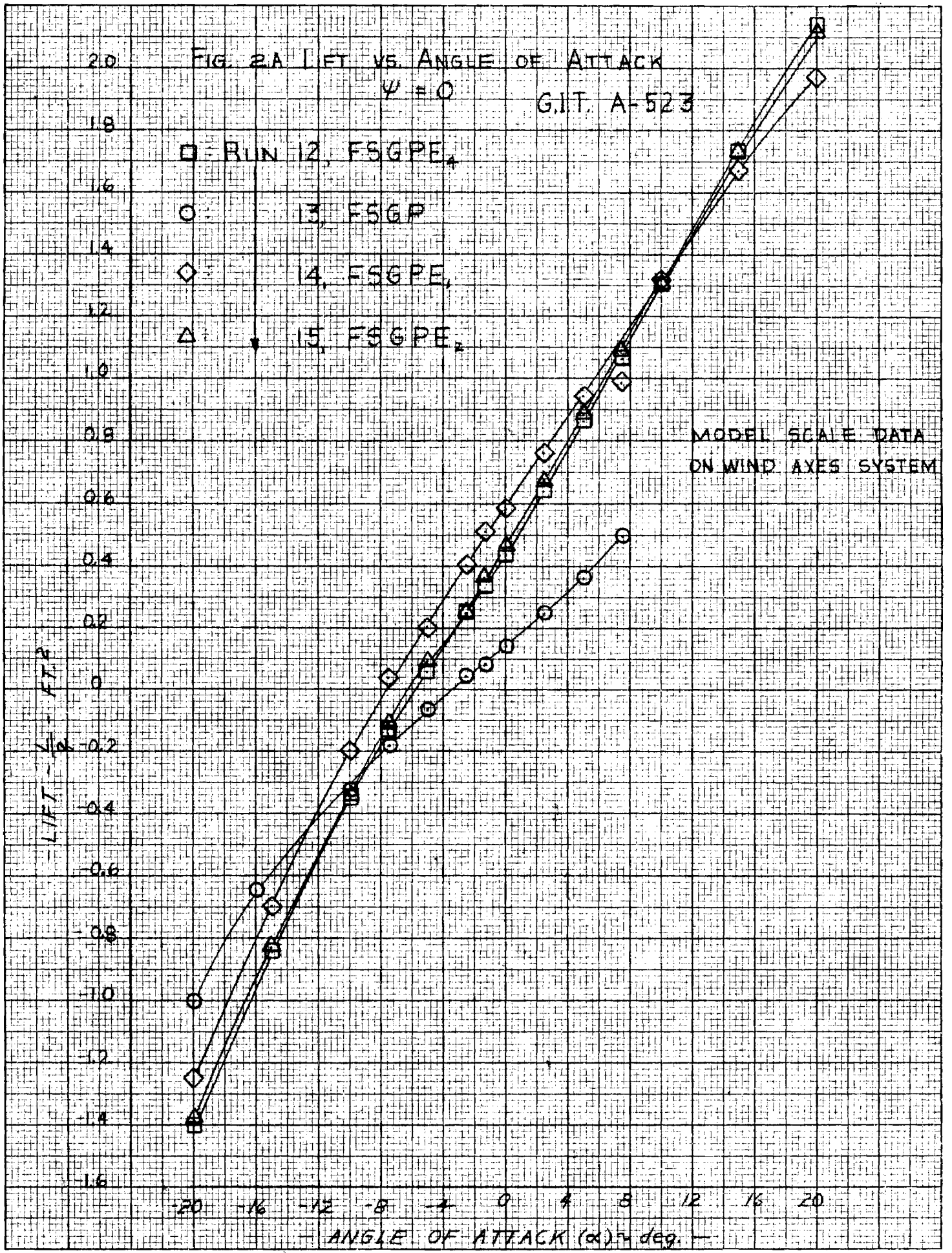


FIG. 2A LIFT VS. ANGLE OF ATTACK
ψ = 0
G.I.T. A-523
□ - RUN 12, FSGPE4
○ - 13, FSGP
◇ - 14, FSGPE1
△ - 15, FSGPE2
MODEL SCALE DATA
ON WIND AXES SYSTEM
LIFT - V/qS - FT.²
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
-1.4
-1.6
-20
-16
-12
-8
-4
0
4
8
12
16
20
ANGLE OF ATTACK (α) - deg.

FIG. 28 DRAG VS. ANGLE OF ATTACK G.I.T.-A 523

$\psi = 0°$

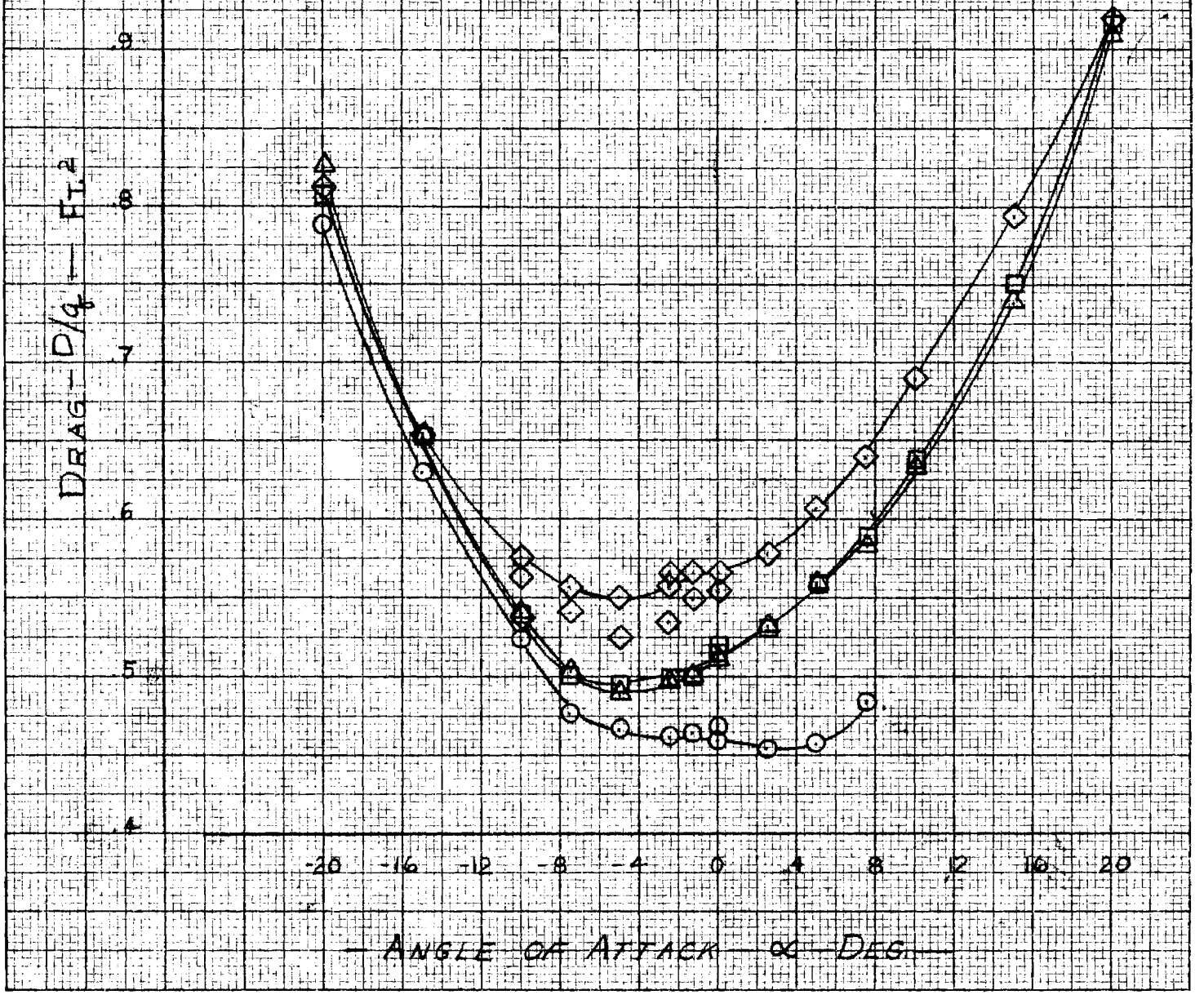
□ RUN 12 FSGPE4

○ 13 FSGP

◇ 14 FSGPE1

△ 15 FSGPE2

MODEL SCALE DATA ON WIND AXES SYSTEM



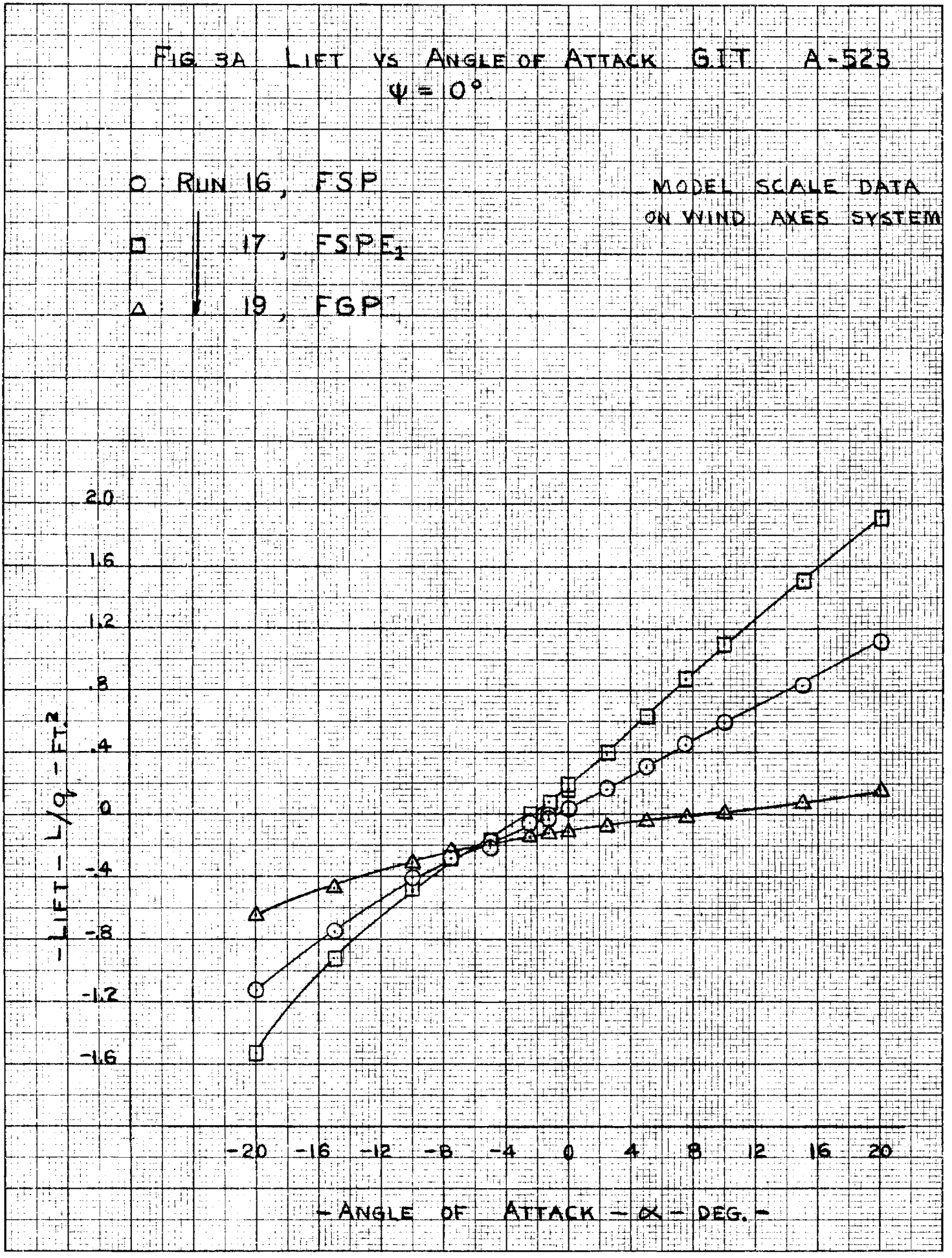


FIG 3A LIFT VS ANGLE OF ATTACK G.I.T. A-523
ψ = 0°
○ RUN 16, FSP
□ 17, FSPE1
△ 19, FGP
MODEL SCALE DATA
ON WIND AXES SYSTEM
-LIFT - L/q - FT.²
2.0
1.6
1.2
.8
.4
0
-.4
-.8
-1.2
-1.6
-20 -16 -12 -8 -4 0 4 8 12 16 20
- ANGLE OF ATTACK - α - DEG. -

FIG 38 DRAG VS ANGLE OF ATTACK G.I.T. A-523

$\psi = 0°$

○ RUN 16, FSP

□ " 17, FSPE$_1$

△ " 19, FGP

MODEL SCALE DATA
ON WIND AXES SYSTEM

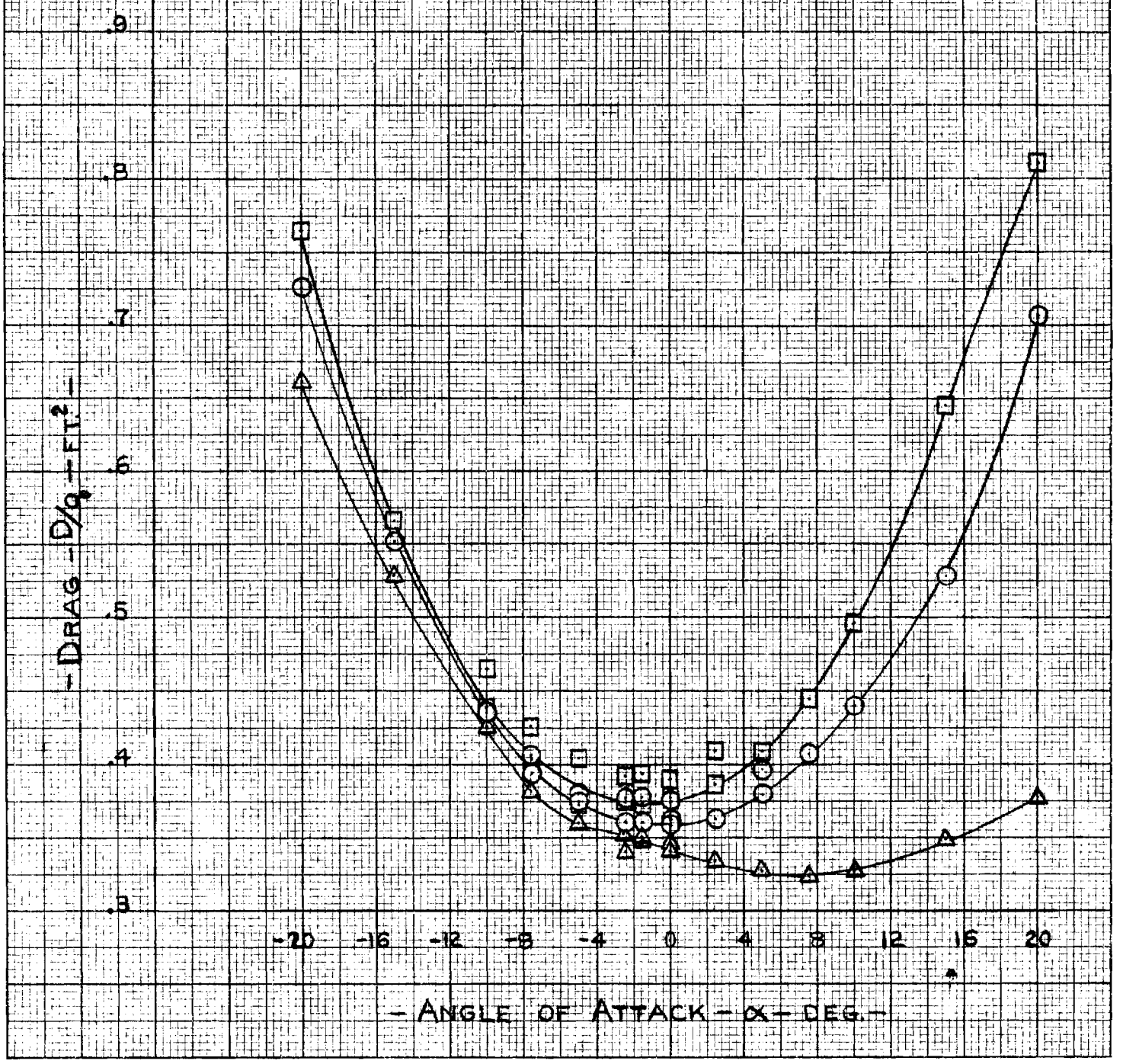


FIG 4A LIFT VS ANGLE OF ATTACK G.I.T. A-523

$\psi = 0°$

⊙: RUN 44 FSGP

□: 49 FSPE$_1$

◇: 38 FSPE$_3$

△: 35 FSPE$_2$

MODEL SCALE DATA ON WIND AXES SYSTEM

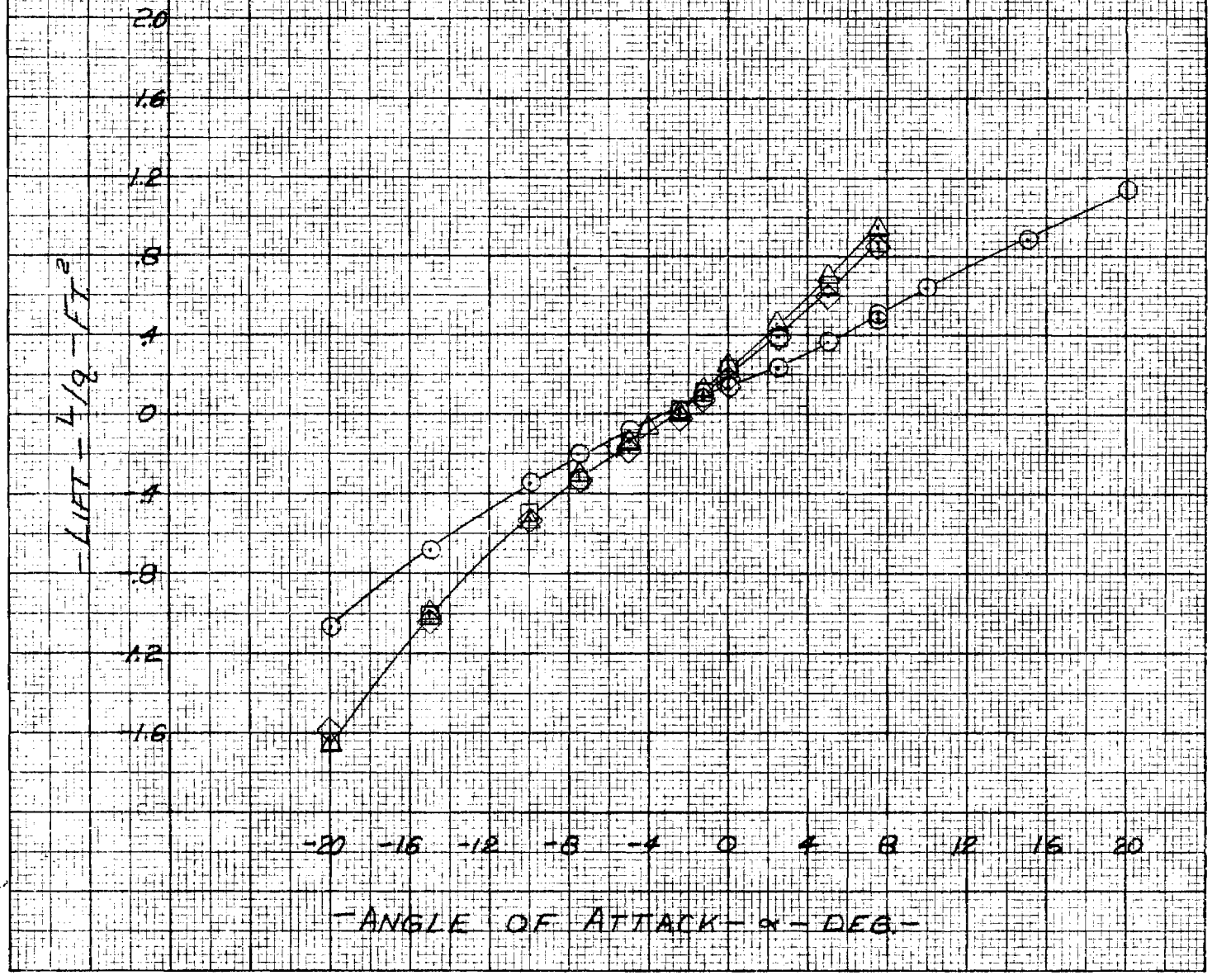


FIG. 4B DRAG VS ANGLE OF ATTACK G.I.T. A-523

⊙: RUN 44 FSGP
□: 49 FSPE$_1$
◇: 38 FSPE$_3$
△: 35 FSPE$_2$

MODEL SCALE DATA ON WIND AXES SYSTEM

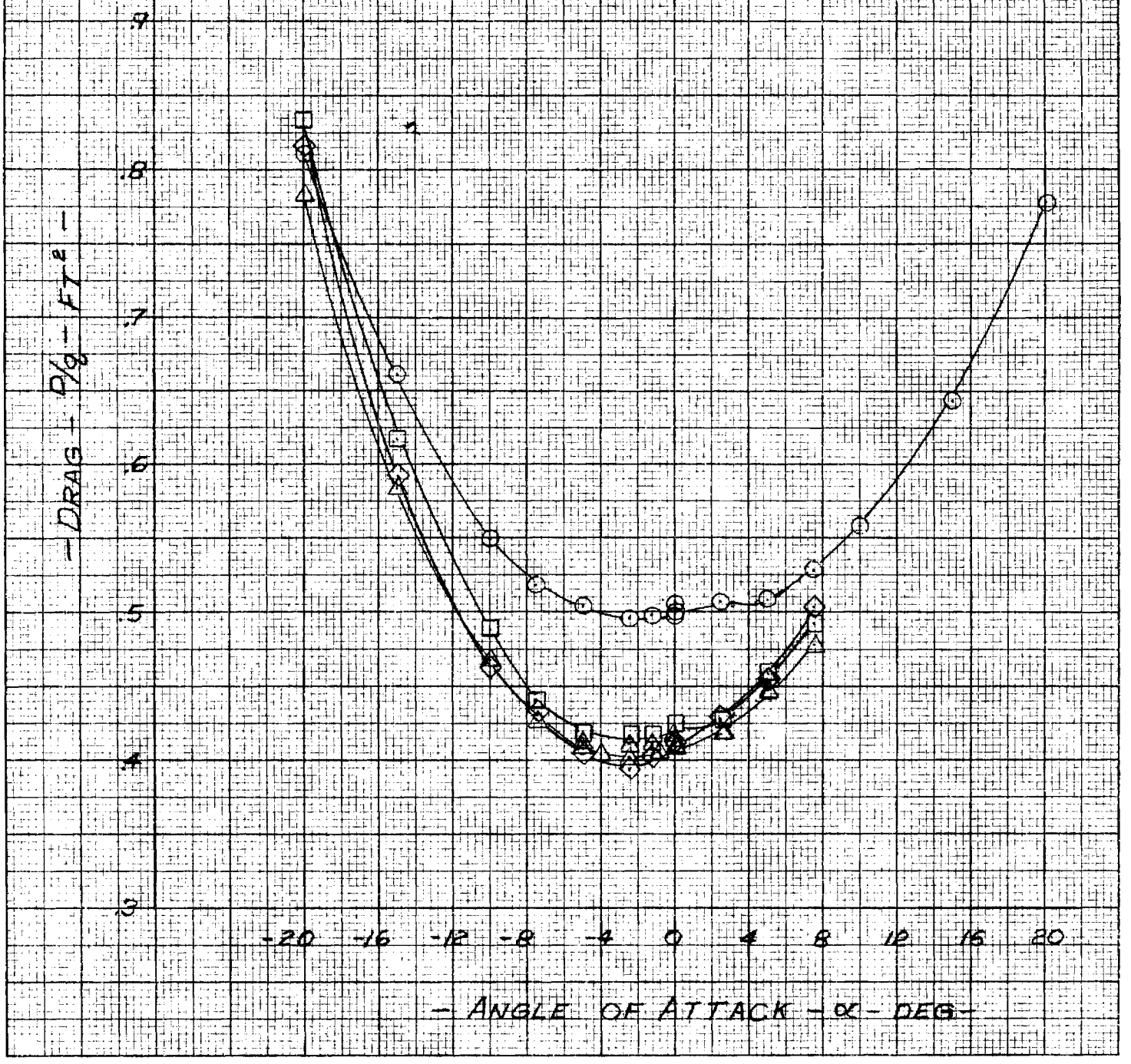


FIG. 5A LIFT VS ANGLE OF ATTACK GIT A-523

$\psi = 0°$

MODEL SCALE DATA
ON WIND AXES SYSTEM.

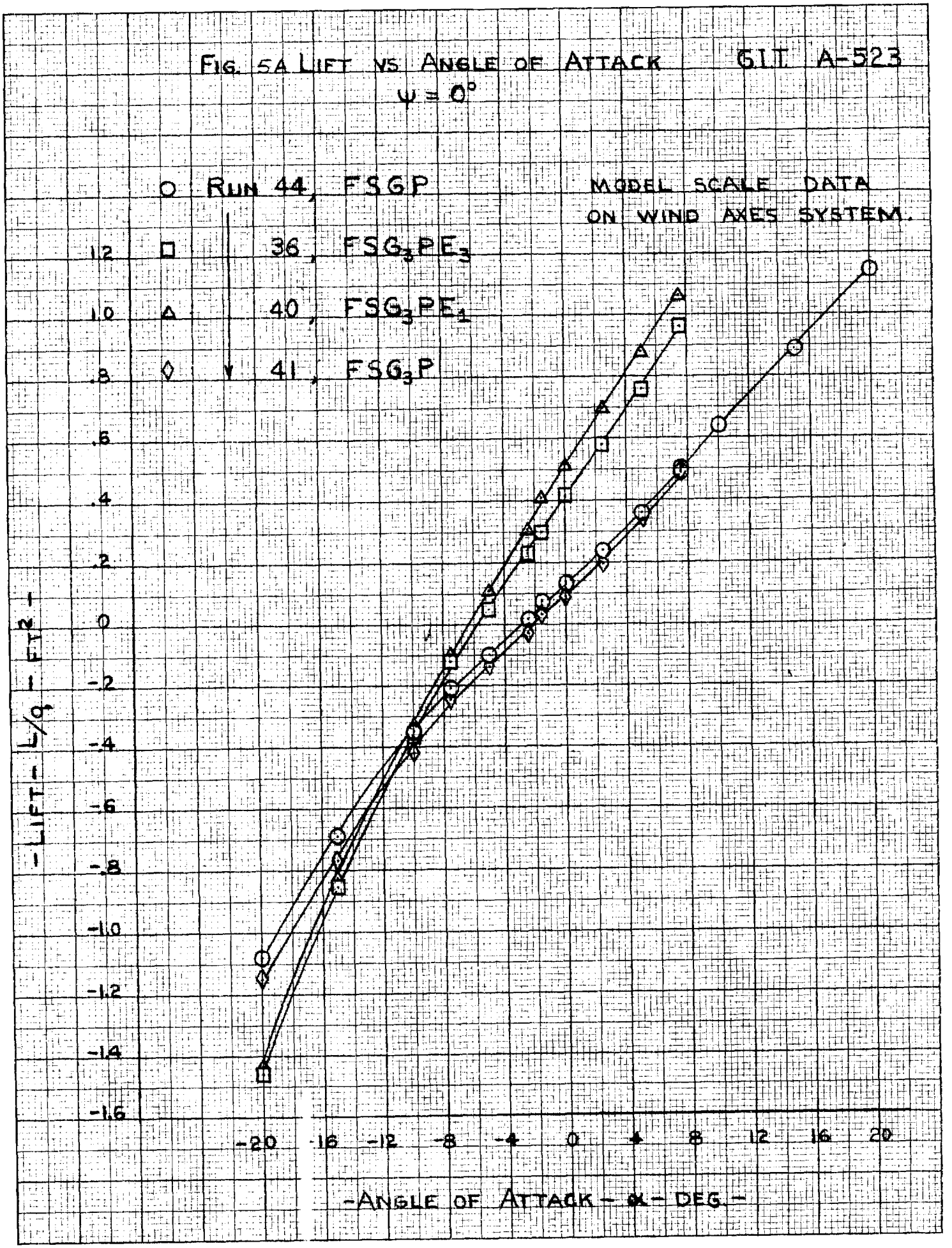


FIG. 5B DRAG VS ANGLE OF ATTACK GIT. A-523

$\psi = 0$

○ RUN 44, FSGP

□ 36, FSG_3PE_3

△ 40, FSG_3PE_1

◇ 41, FSG_3P

MODEL SCALE DATA
ON WIND AXES SYSTEM

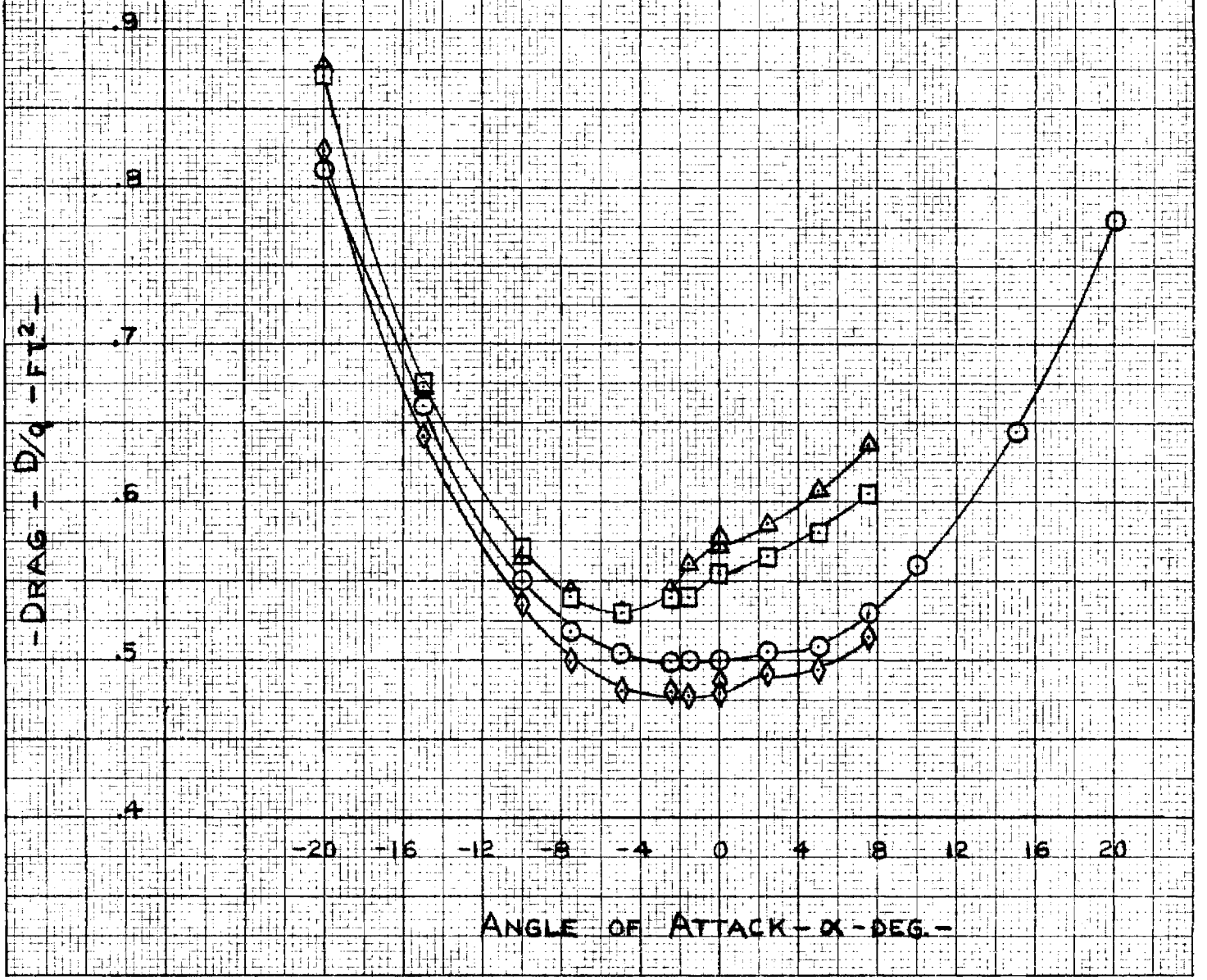


FIG. 6A, LIFT VS ANGLE OF ATTACK G.I.T. A-523

$\psi = 0°$

○ : RUN 44, FSGP

□ 61, FSG_2PE_1

△ ▼ 62, FSG_1PE_1

MODEL SCALE DATA
ON WIND AXES SYSTEM

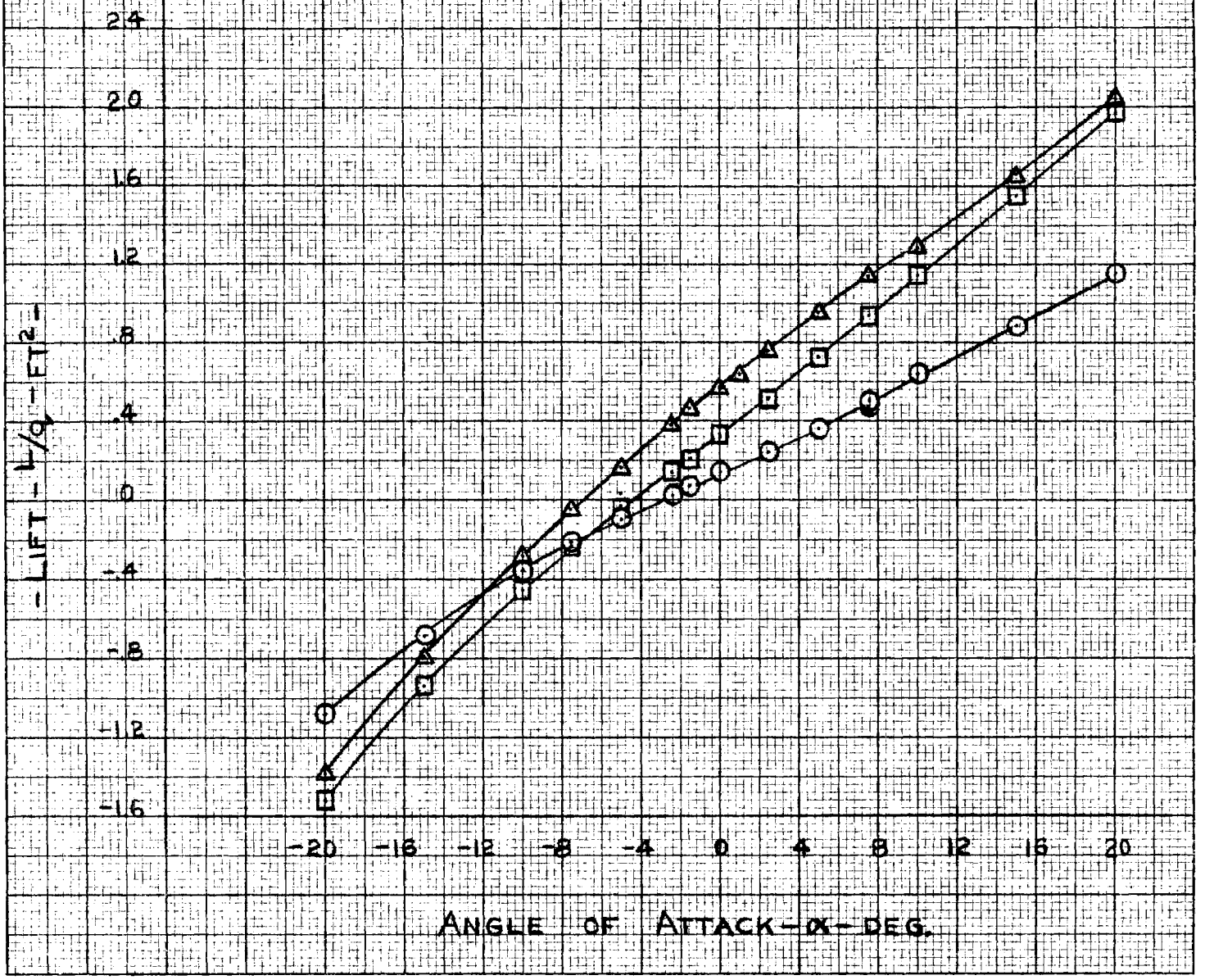


FIG 6B DRAG VS ANGLE OF ATTACK G.I.T. A-523

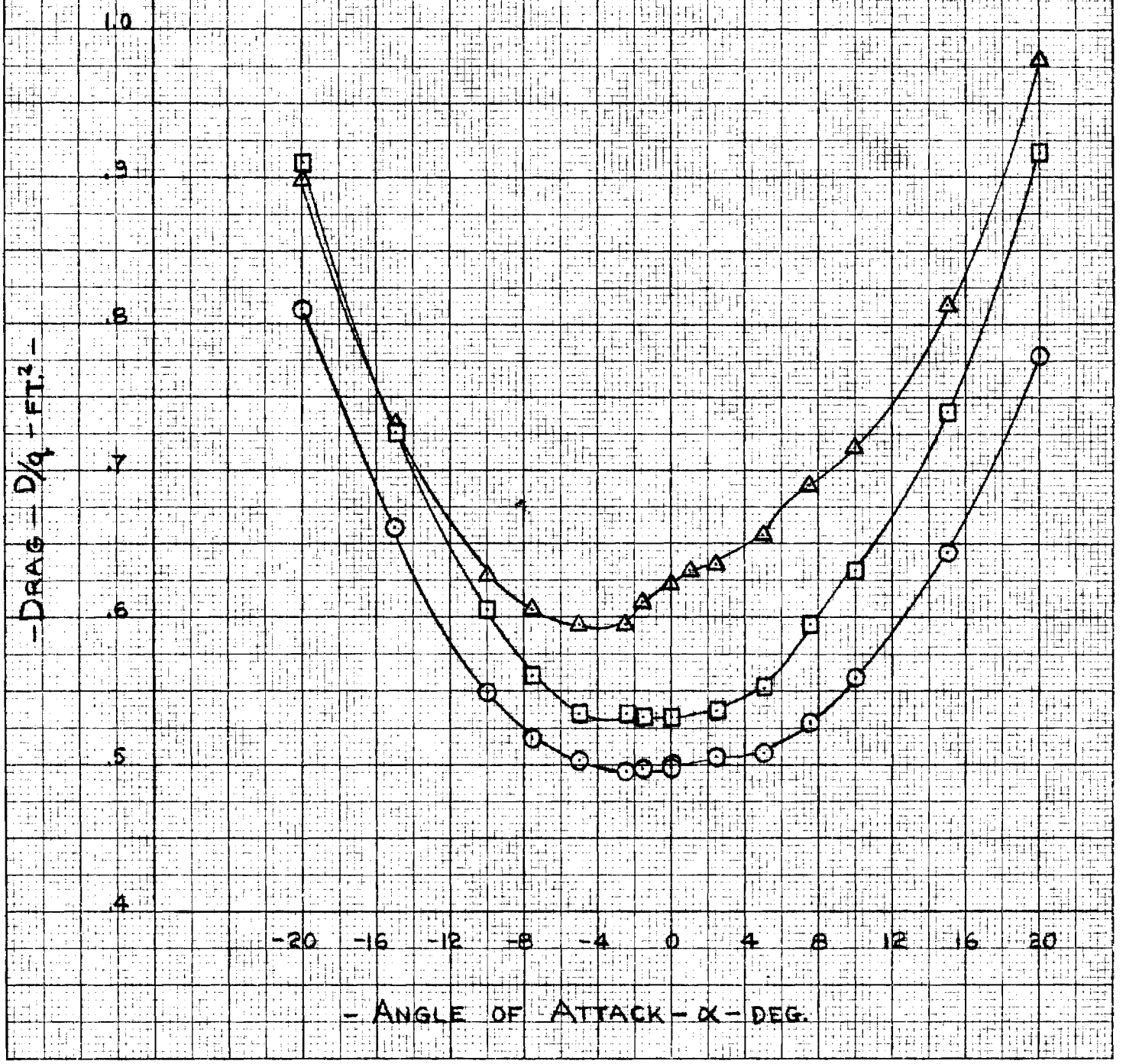
$\psi = 0$

○ RUN 44, FSGP

□ 61, FSG_2PE_1

△ 62, FSG_1PE_1

MODEL SCALE DATA
ON WIND AXES SYSTEM



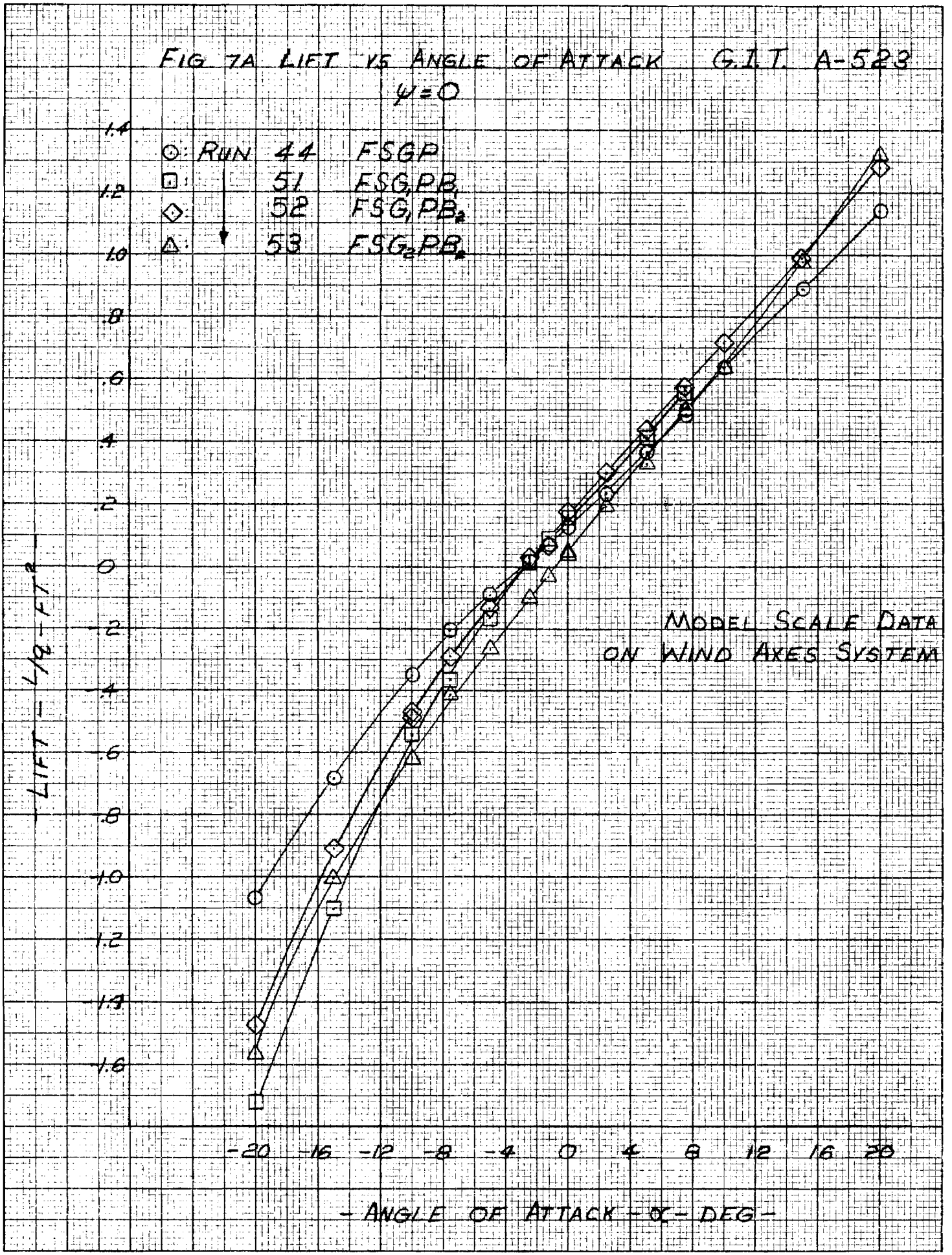


FIG 7A LIFT VS ANGLE OF ATTACK G.I.T. A-523
ψ = 0
⊙: RUN 44 FSGP
□: 51 FSG,PB,
◇: 52 FSG,PB2
△: 53 FSG2PB2
MODEL SCALE DATA
ON WIND AXES SYSTEM
- LIFT - L/q - FT²
1.4
1.2
1.0
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1.0
-1.2
-1.4
-1.6
-20 -16 -12 -8 -4 0 4 8 12 16 20
- ANGLE OF ATTACK - α - DEG -

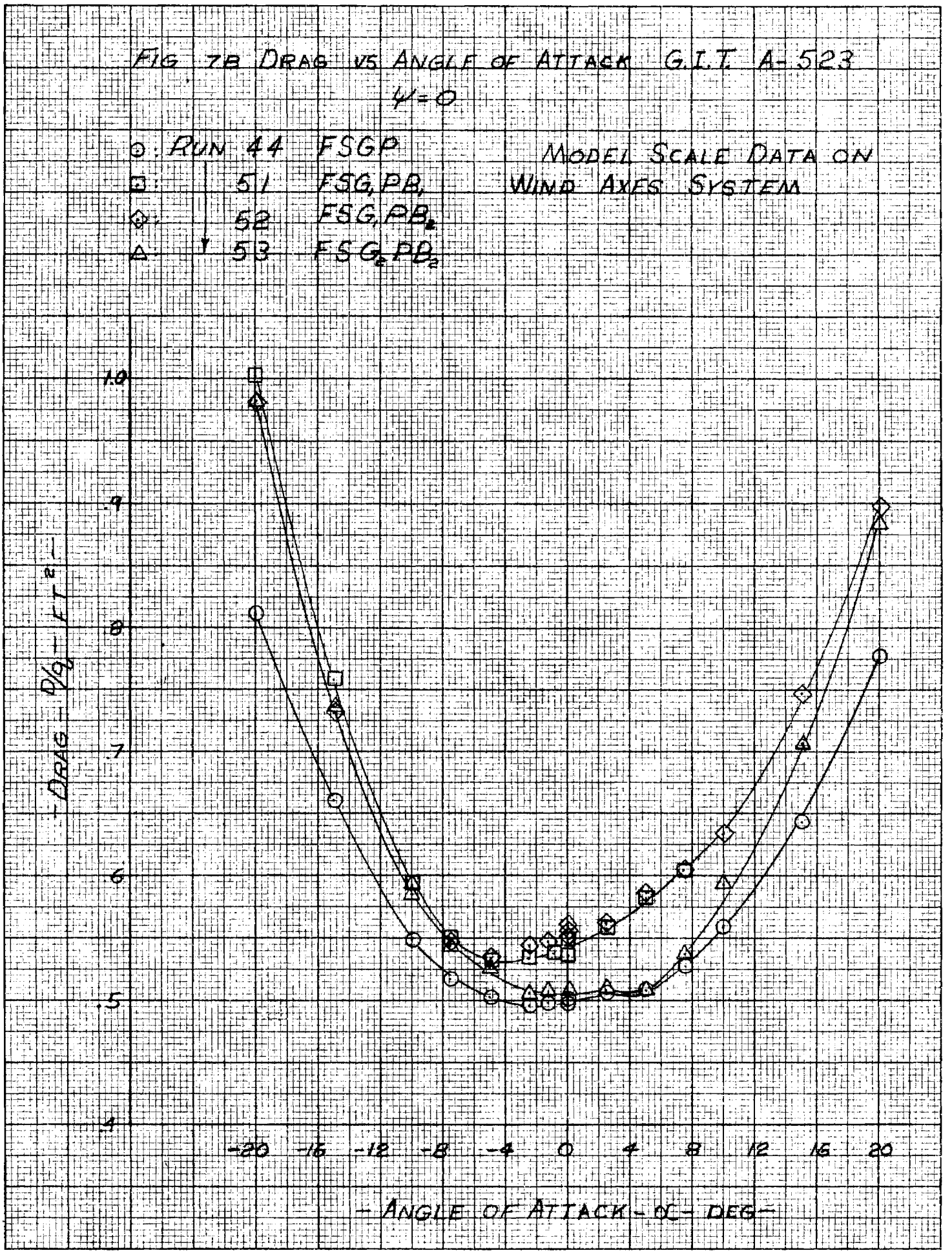


FIG 7B DRAG VS ANGLE OF ATTACK G.I.T. A-523
ψ = 0
○ : RUN 44 FSGP
□ : 51 FSG, PB,
◇ : 52 FSG, PB₂
△ : 53 FSG₂ PB₂
MODEL SCALE DATA ON WIND AXES SYSTEM
- DRAG - D/q - FT²
1.0
.9
.8
.7
.6
.5
.4
-20 -16 -12 -8 -4 0 4 8 12 16 20
- ANGLE OF ATTACK - α - DEG -

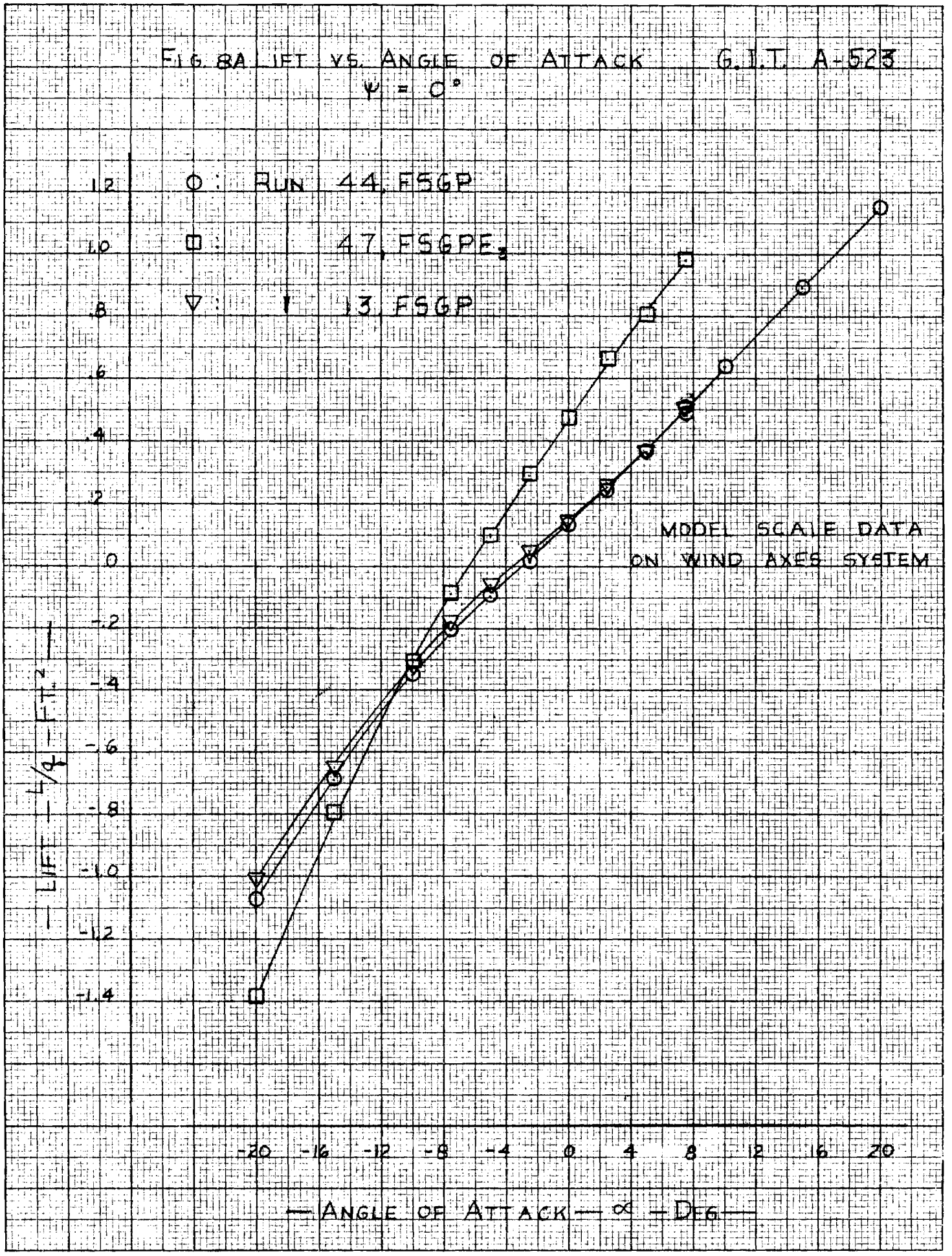
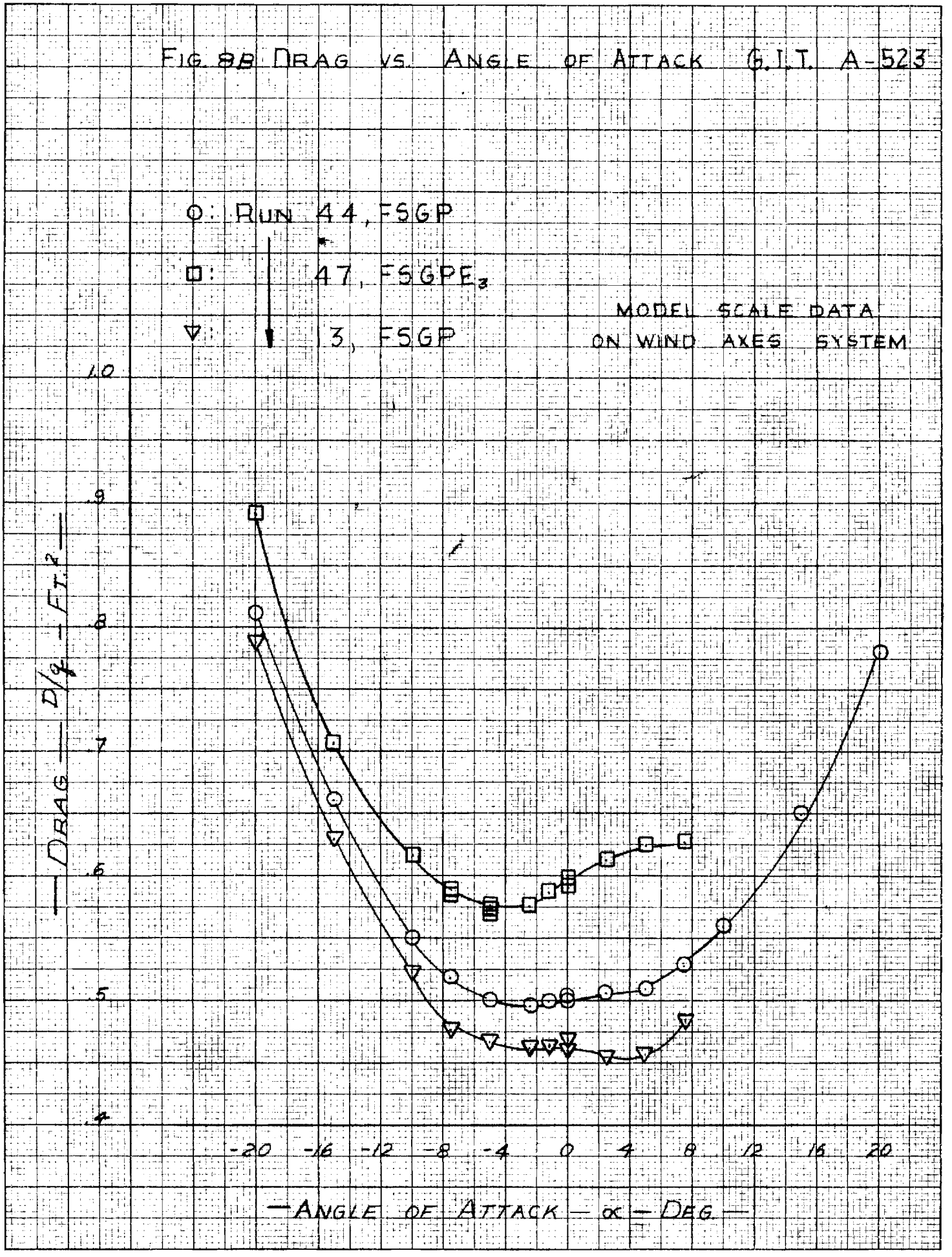


FIG. 8A LIFT VS. ANGLE OF ATTACK G.I.T. A-523
ψ = 0°
○ : RUN 44, FSGP
□ : 47, FSGPE₂
▽ : 13, FSGP
MODEL SCALE DATA
ON WIND AXES SYSTEM
— LIFT — L/q — FT.²
1.2
1.0
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1.0
-1.2
-1.4
-20 -16 -12 -8 -4 0 4 8 12 16 20
— ANGLE OF ATTACK — ∝ — DEG.

FIG. 8B DRAG VS. ANGLE OF ATTACK G.I.T. A-523



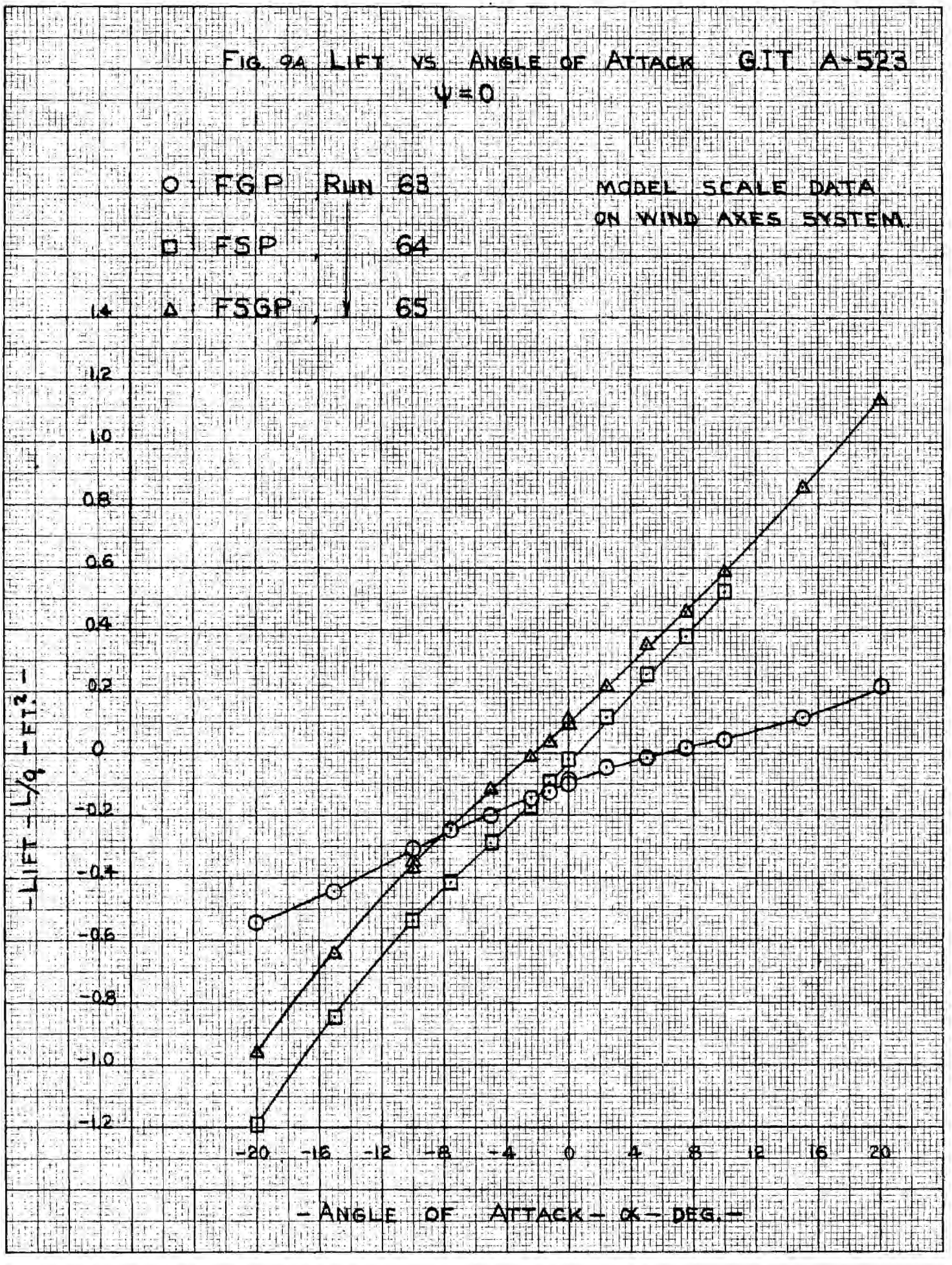


FIG. 9A LIFT VS ANGLE OF ATTACK G.I.T. A-523
ψ = 0
○ FGP RUN 68
□ FSP 64
△ FSGP 65
MODEL SCALE DATA
ON WIND AXES SYSTEM.
-LIFT = L/q - FT.²
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
-20
-16
-12
-8
-4
0
4
8
12
16
20
- ANGLE OF ATTACK - α - DEG. -

FIG. 98 DRAG VS ANGLE OF ATTACK G.I.T. A-523

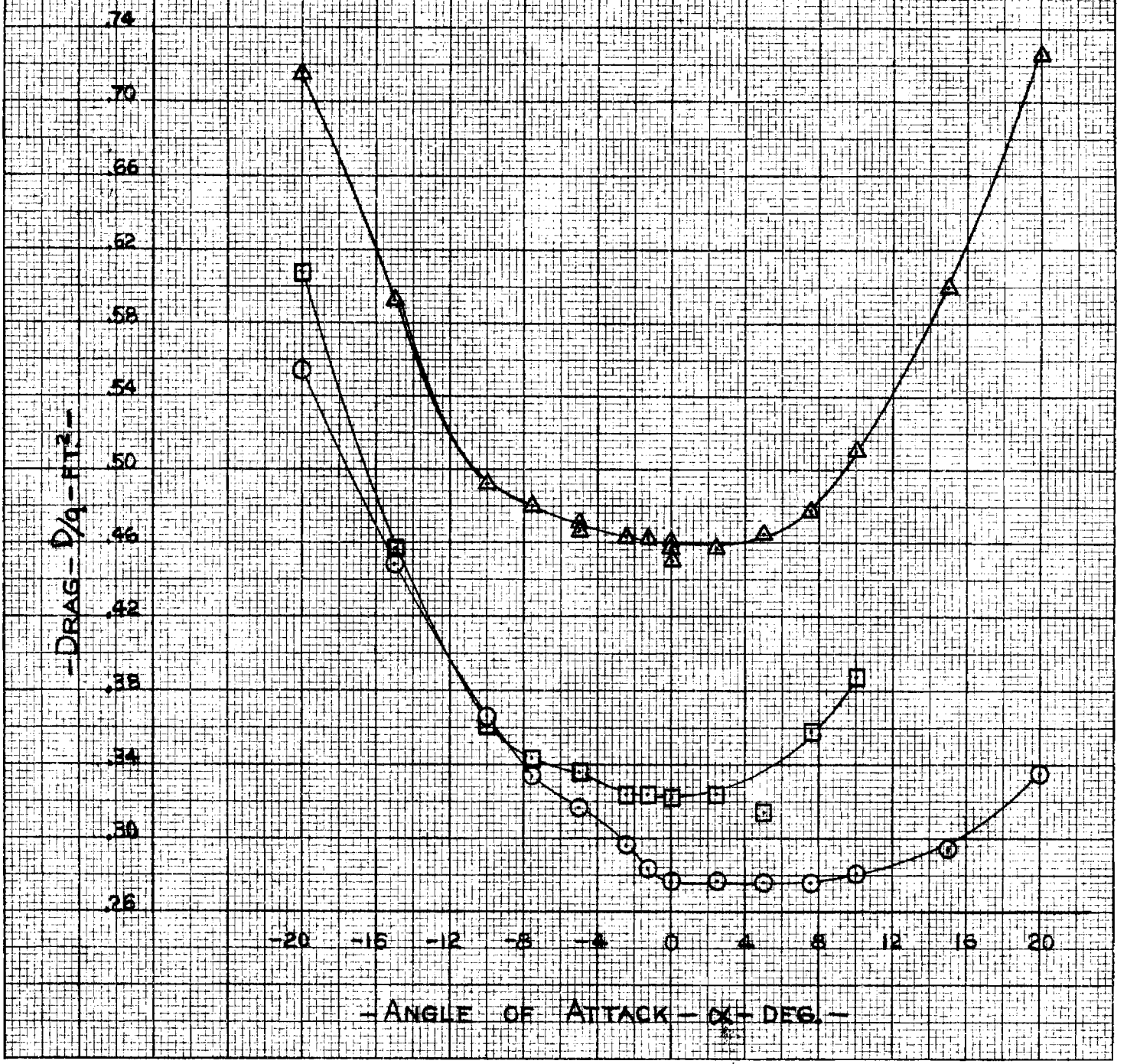
$\psi = 0$

○ FGP, RUN 63

□ FSP, " 64

△ FSGP, " 65

MODEL SCALE DATA
ON WIND AXES SYSTEM



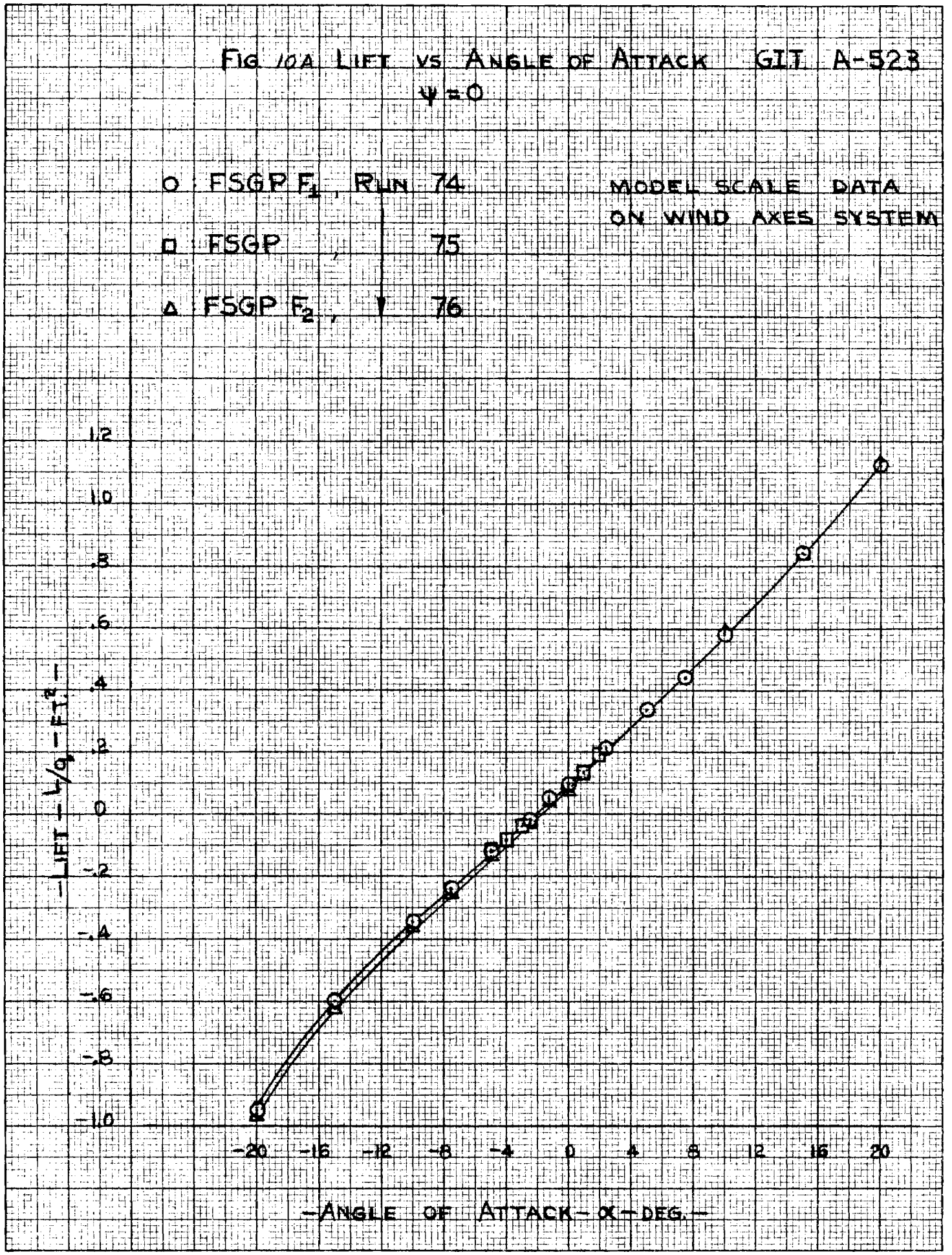


FIG 10A LIFT VS ANGLE OF ATTACK GIT A-523
ψ = 0
○ FSGP F1, RUN 74
□ FSGP " 75
△ FSGP F2, " 76
MODEL SCALE DATA
ON WIND AXES SYSTEM
1.2
1.0
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1.0
-LIFT = L/qS = Ft.
-20
-16
-12
-8
-4
0
4
8
12
16
20
-ANGLE OF ATTACK - α - DEG.-

FIG. 108 DRAG VS ANGLE OF ATTACK G.I.T. A-523

$\psi = 0$

MODEL SCALE DATA
ON WIND AXES SYSTEM.

○ : FSGPF$_1$, RUN 74
□ : FSGP , " 75
△ : FSGPF$_2$, " 76

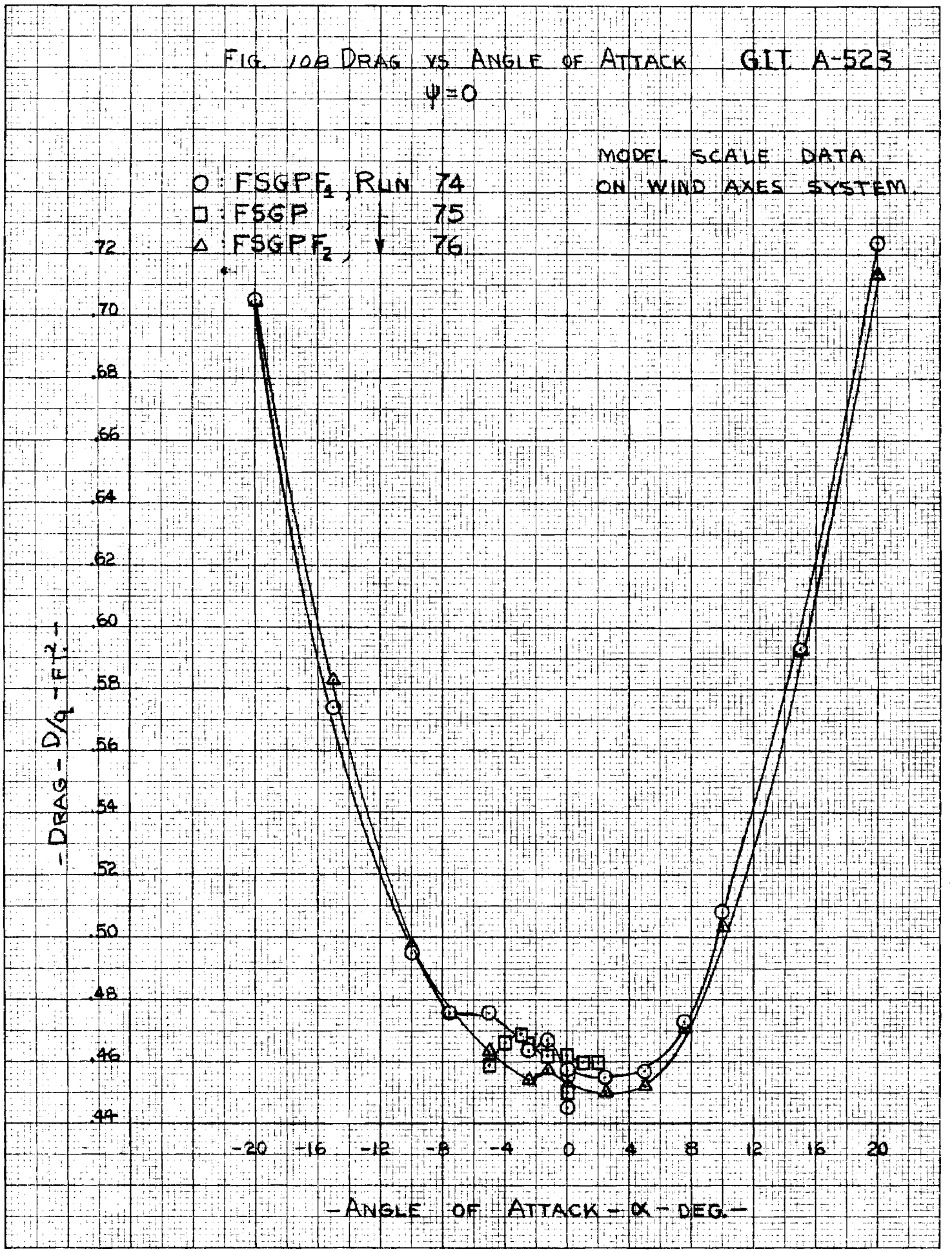


FIG 11 YAWING MOMENT VS ANGLE OF YAW GTTA-523

$\alpha_L = -1.3°$

○: RUN 66, FSGP $(CBO)_2$

□: 68, ↓

◇: 70, ↓ $(CBO)_1$

△: 72, ↓ $(CBO)_3$

MODEL SCALE DATA ON BODY AXIS SYSTEM

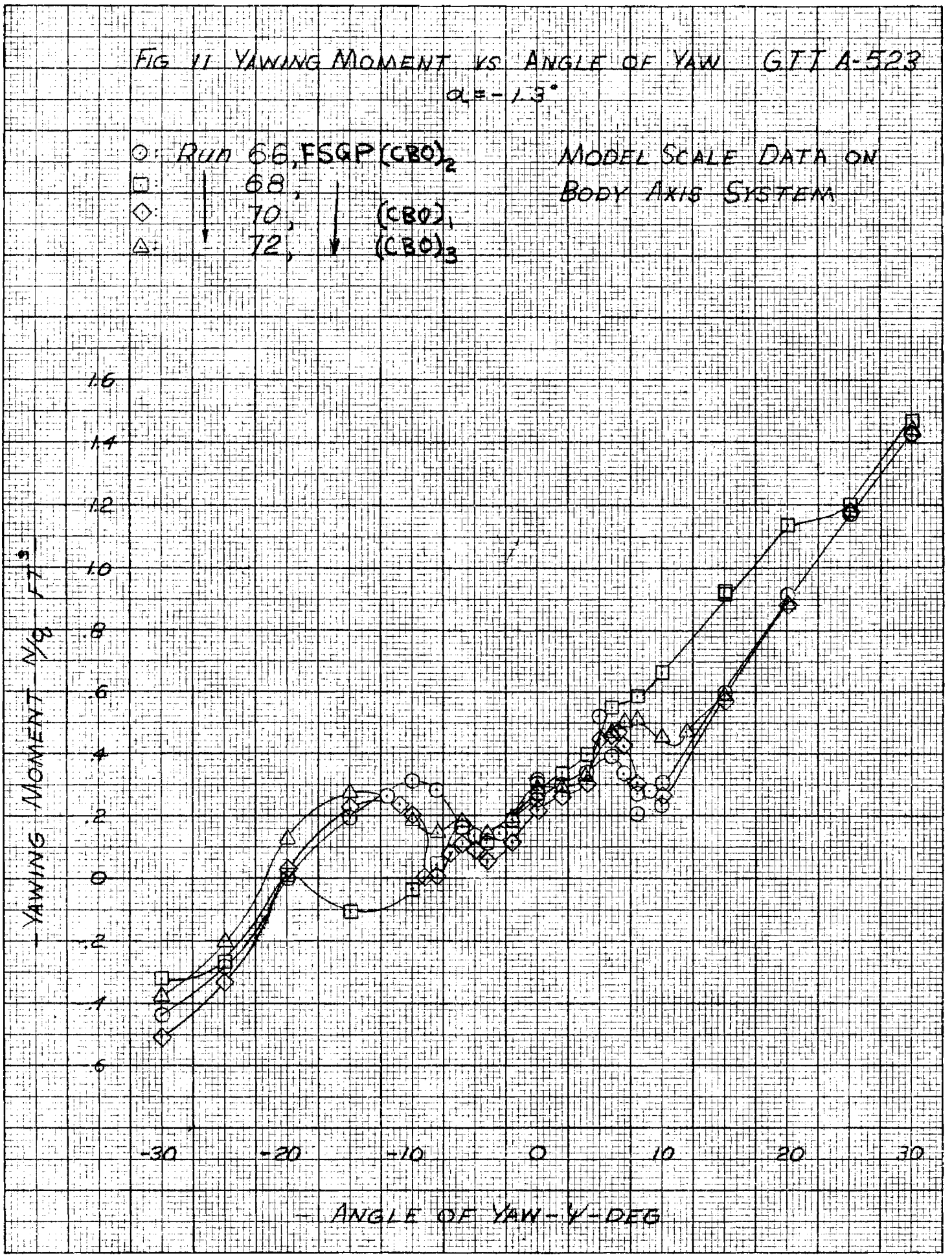


FIG. 12 YAWING MOMENT VS. ANGLE OF YAW G.I.T. A-523

$\alpha = +20°$

○ : RUN 67, FSGP $(C_{BO})_2$ MODEL SCALE DATA ON BODY AXIS SYSTEM

□ : 69, FSGP

◇ : 71, FSGP $(C_{BO})_1$

△ : 73, FSGP $(C_{BO})_3$

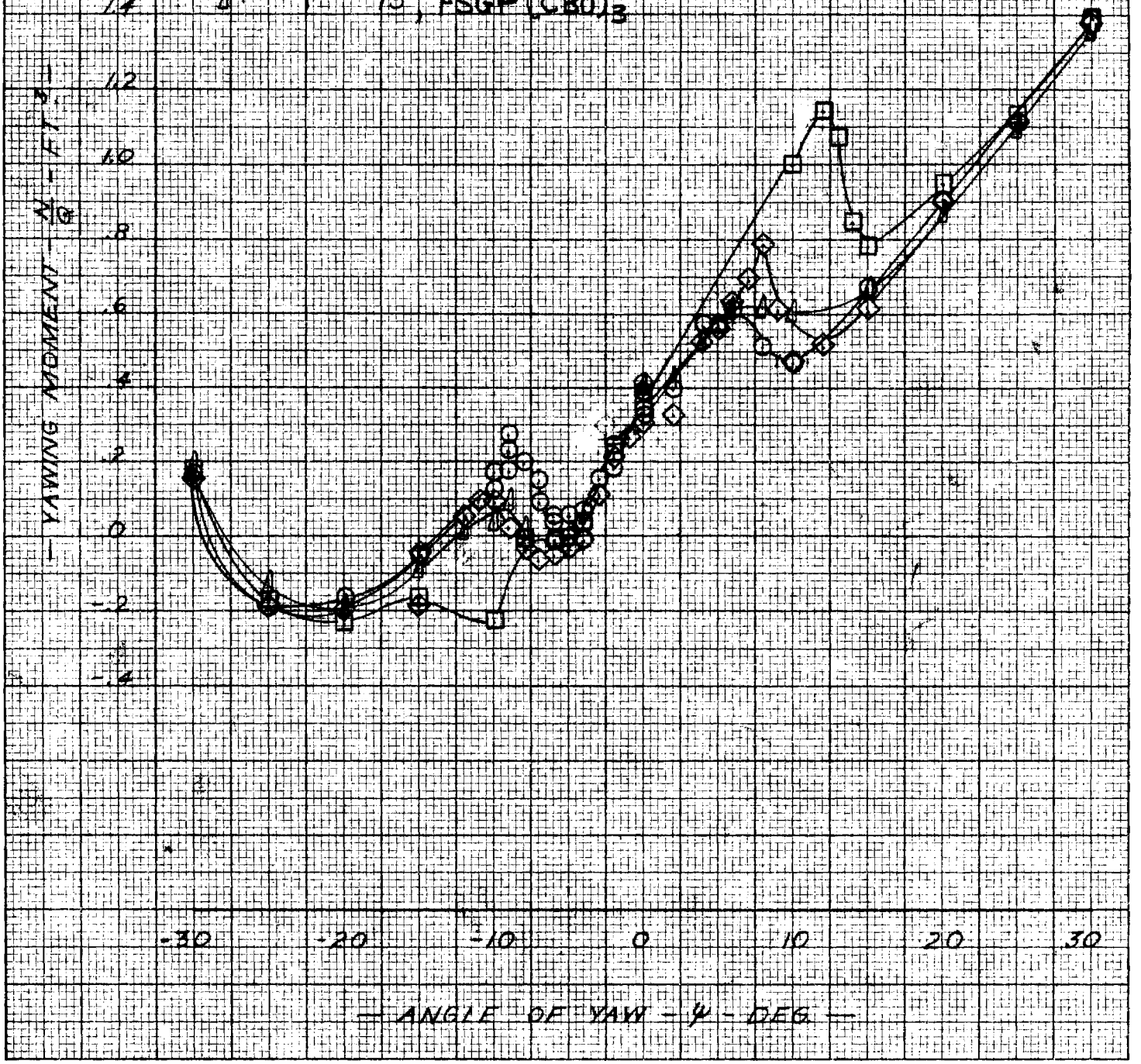


FIG 13 YAWING MOMENT VS ANGLE OF YAW G.I.T. A-523

○ : RUN 66, FSGP(CBO)$_2$, α = -1.3° MODEL SCALE DATA ON

□ : " 77, FSGP F_2 " " = -1.3° BODY AXIS SYSTEM

◇ : " 78, " " " = 20°

△ : " 67, FSGP(CBO)$_2$ " = 20°

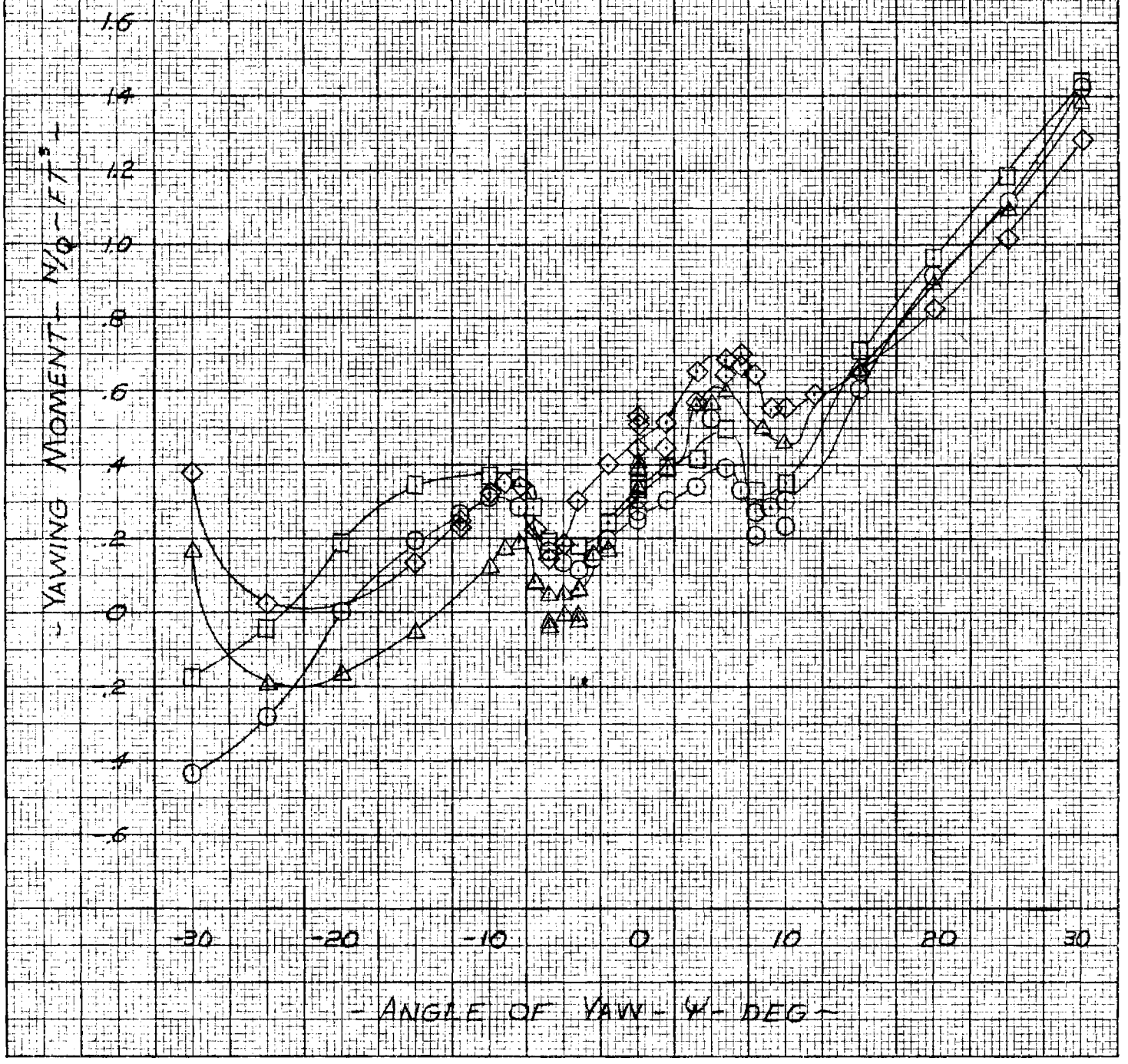


FIG. 14 YAWING MOMENT VS. ANGLE OF YAW G.I.T. A-523

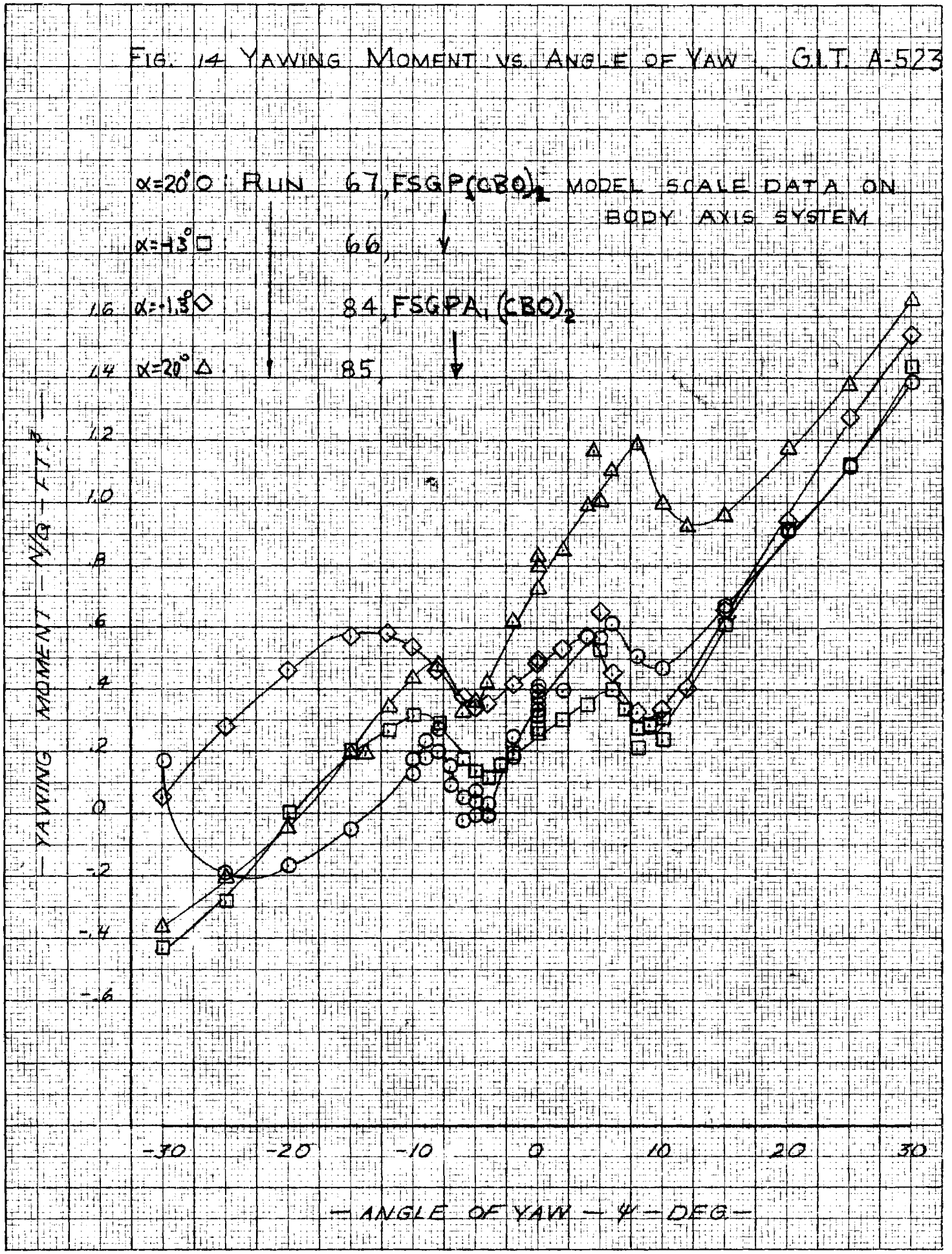


FIG 15 YAWING MOMENT VS ANGLE OF YAW G.I.T A-523

$\alpha = -1.3$

□: RUN 68, FSGP

◇: 86, FSGPA$_1$

△: 90, FSGPA$_2$

MODEL SCALE DATA ON BODY AXIS SYSTEM

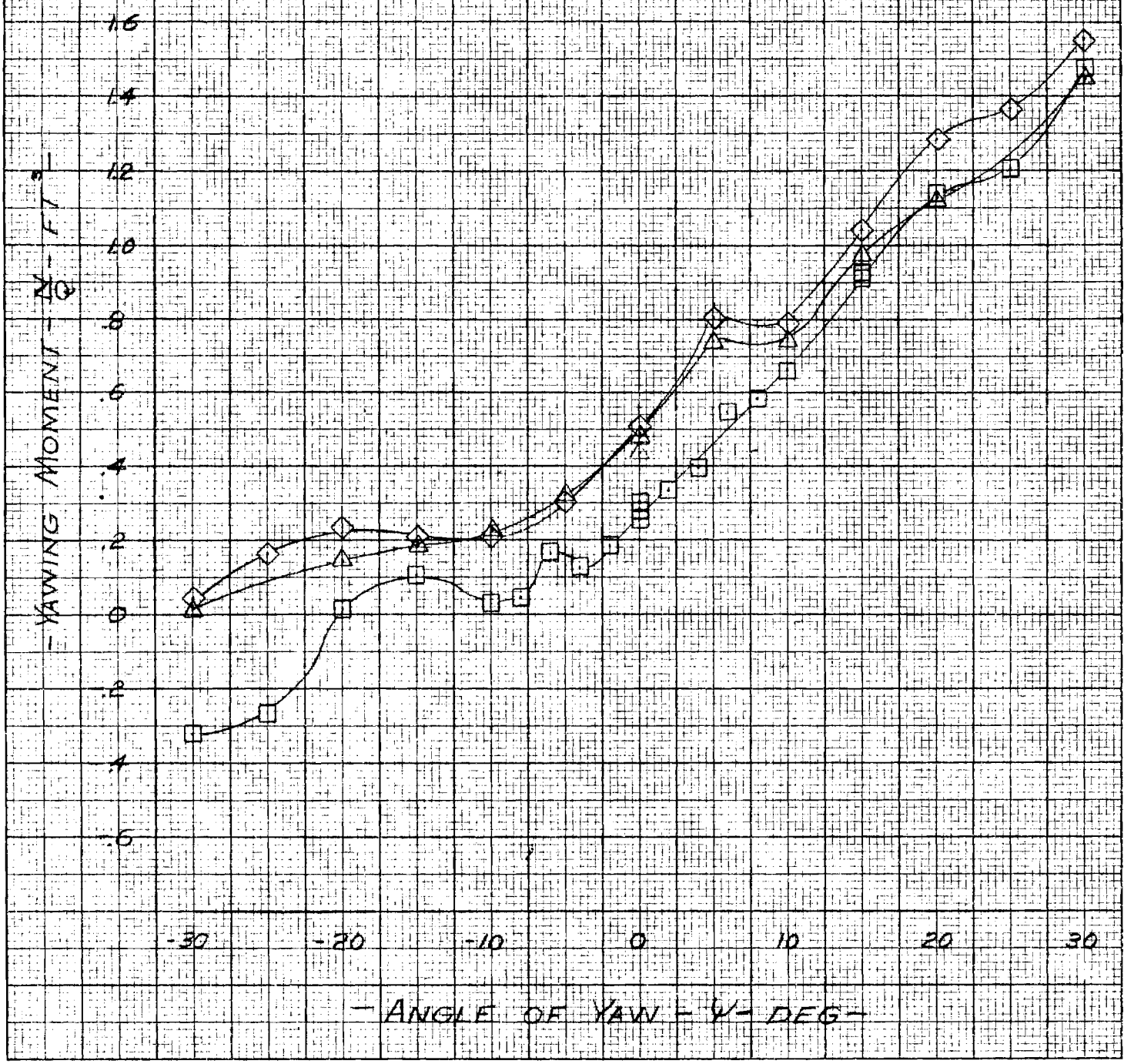


FIG. 16 YAWING MOMENT VS. ANGLE OF YAW G.I.T. A-523

$\alpha = +20°$

MODEL SCALE DATA ON BODY AXIS SYSTEM

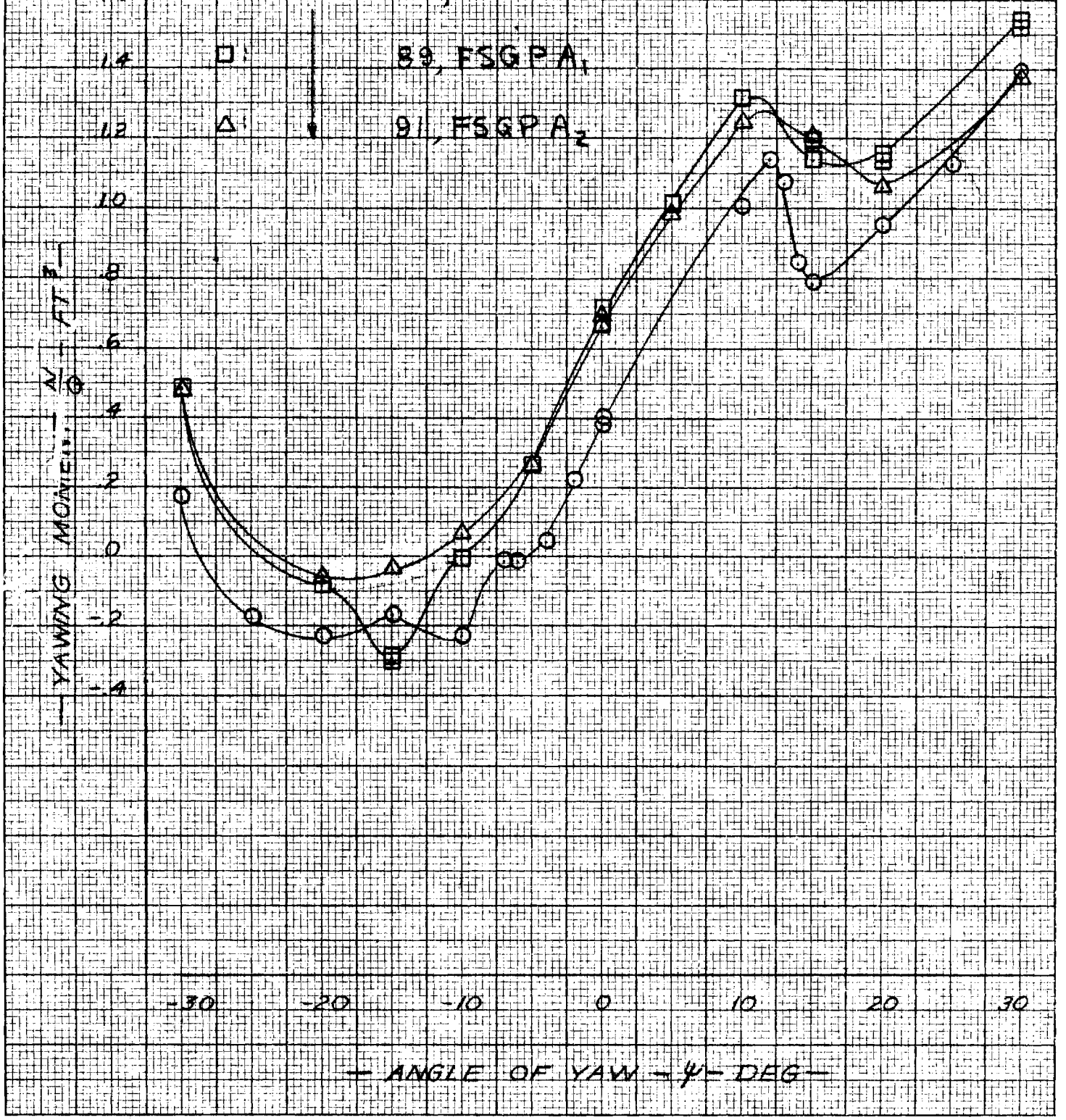


FIG 17 YAWING MOMENT VS ANGLE OF YAW G.I.T A-523

○: RUN 93, FSGP$_1$, i_t=0°, α=-1.3° MODEL SCALE DATA ON BODY AXIS SYSTEM

□: 94, , i_t=0°, α=20°

◇: 95, , i_t=5°, α=-1.3°

△: 96, , i_t=10°, α=-1.3°

⬡: 97, FSGP$_1$(CBO), i_t=10°, α=-1.3°

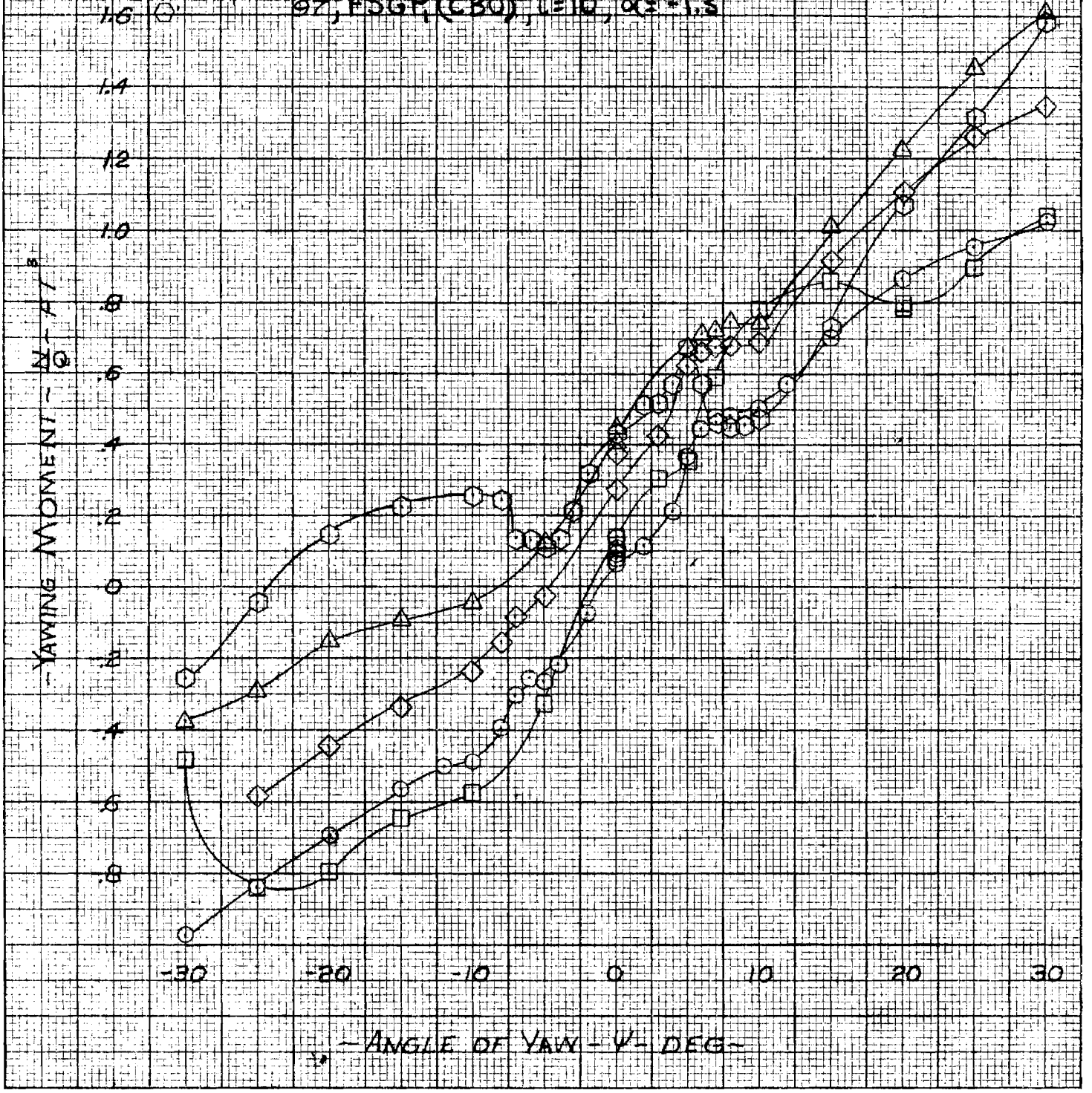


FIG 18 YAWING MOMENT VS ANGLE OF YAW G.I.T. A-523

$\alpha = -1.3°$

○ : RUN 66, FSGP(CBO)$_2$ MODEL SCALE DATA ON

□ 79, FSGP(SF), $\delta_F = 15°$ BODY AXIS SYSTEM

◇ 81, , $\delta_F = 30°$

△ 83, , $\delta_F = 60°$

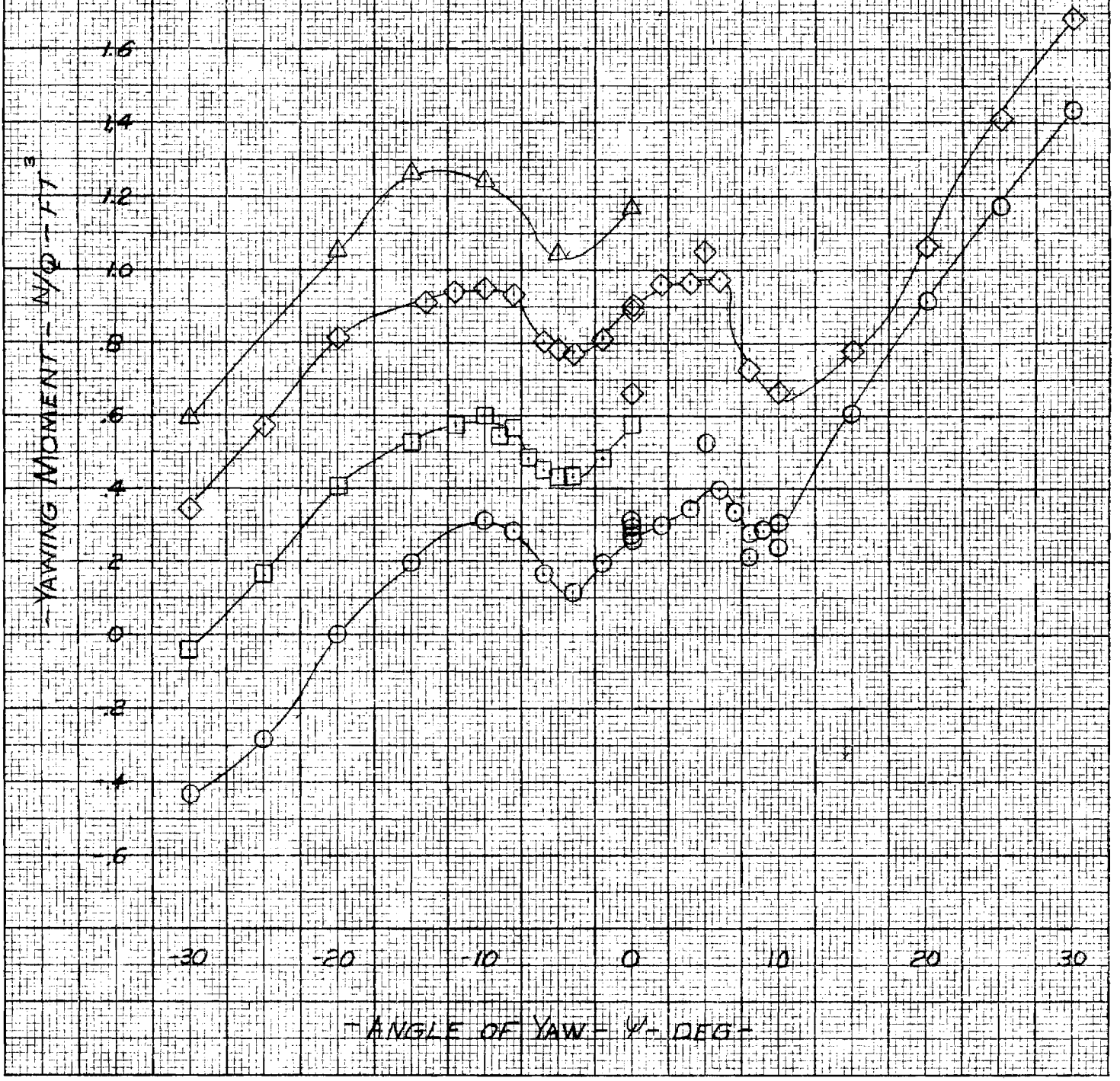


FIG. 19 YAWING MOMENT VS ANGLE OF YAW

$\alpha = +20°$

G.I.T. A-523

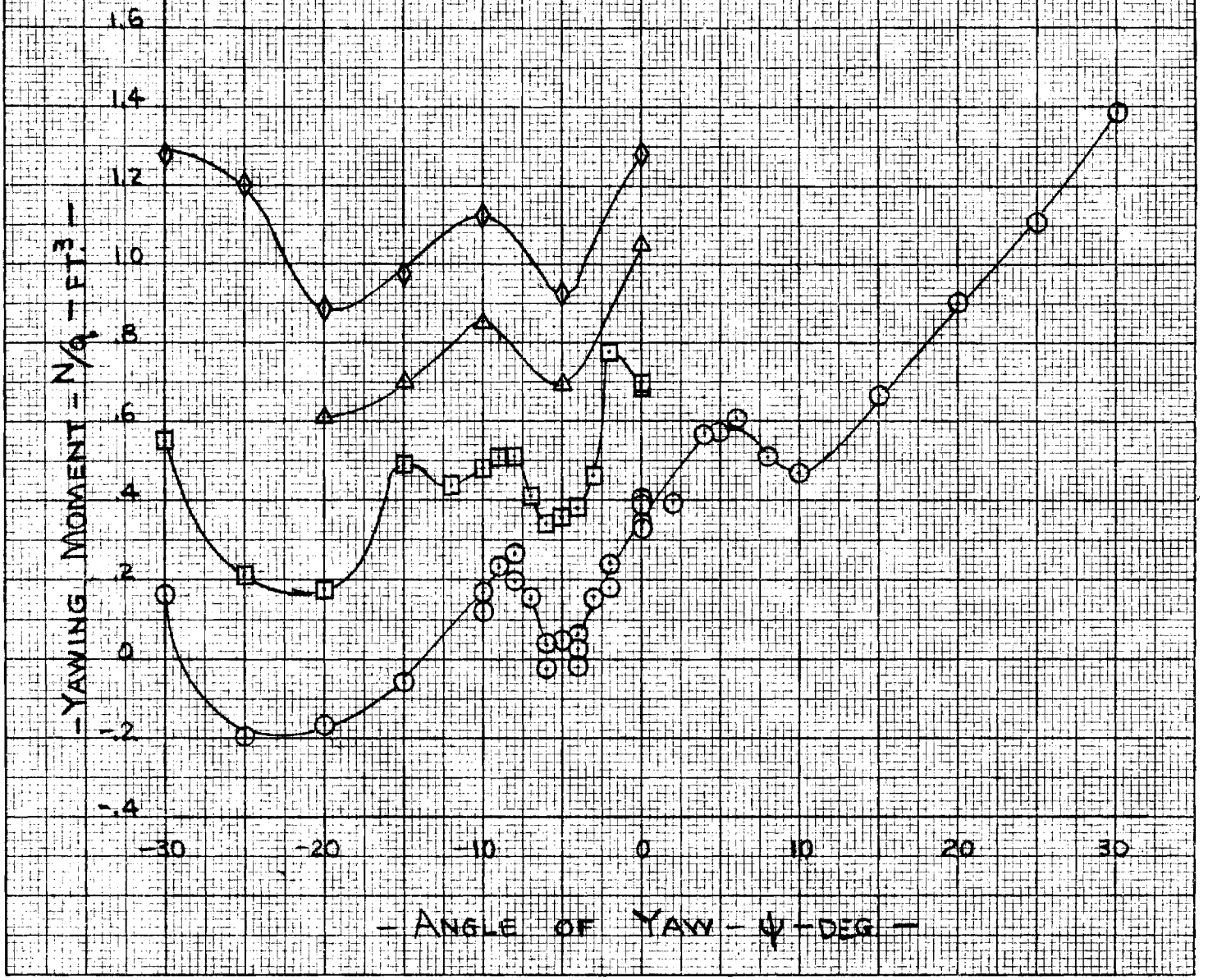
○ : FSGP$(CBO)_2$, RUN 67

□ : FSGP(SF), $\delta_F = 15°$, 80

△ : ", $\delta_F = 30°$, 82

◇ : " , $\delta_F = 60°$, " 83

MODEL SCALE DATA ON BODY AXES SYSTEM.



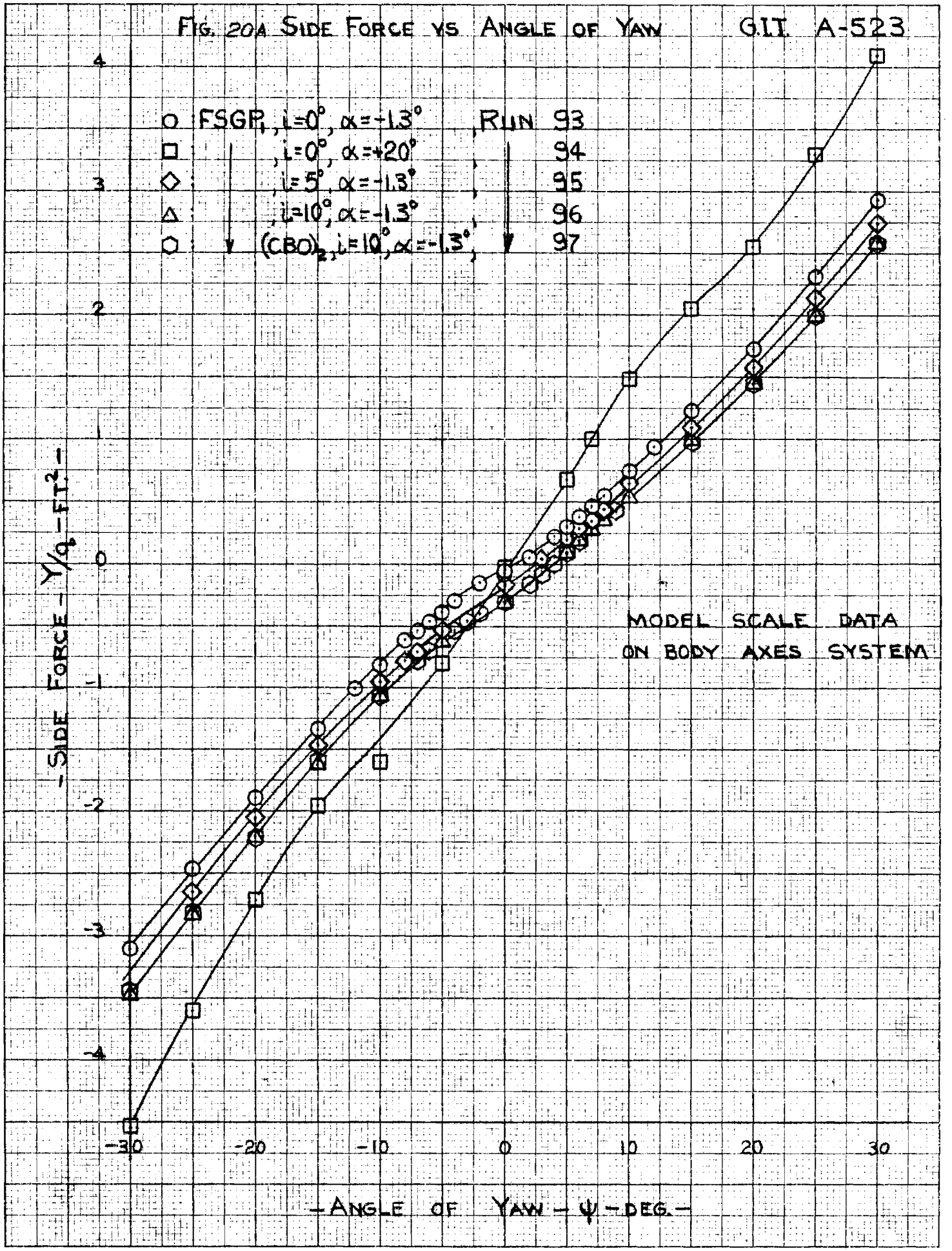


FIG. 20A SIDE FORCE VS ANGLE OF YAW
G.I.T. A-523
FSGP1, i=0°, α=-1.3°, RUN 93
i=0°, α=+20°, 94
i=5°, α=-1.3°, 95
i=10°, α=-1.3°, 96
(CBO)2, i=10°, α=-1.3°, 97
MODEL SCALE DATA
ON BODY AXES SYSTEM
-SIDE FORCE - Y/q - FT.2 -
-ANGLE OF YAW - ψ - DEG.-
4
3
2
1
0
-1
-2
-3
-4
-30
-20
-10
0
10
20
30

FIG. 208 ROLLING MOMENT VS ANGLE OF YAW GIT A-523

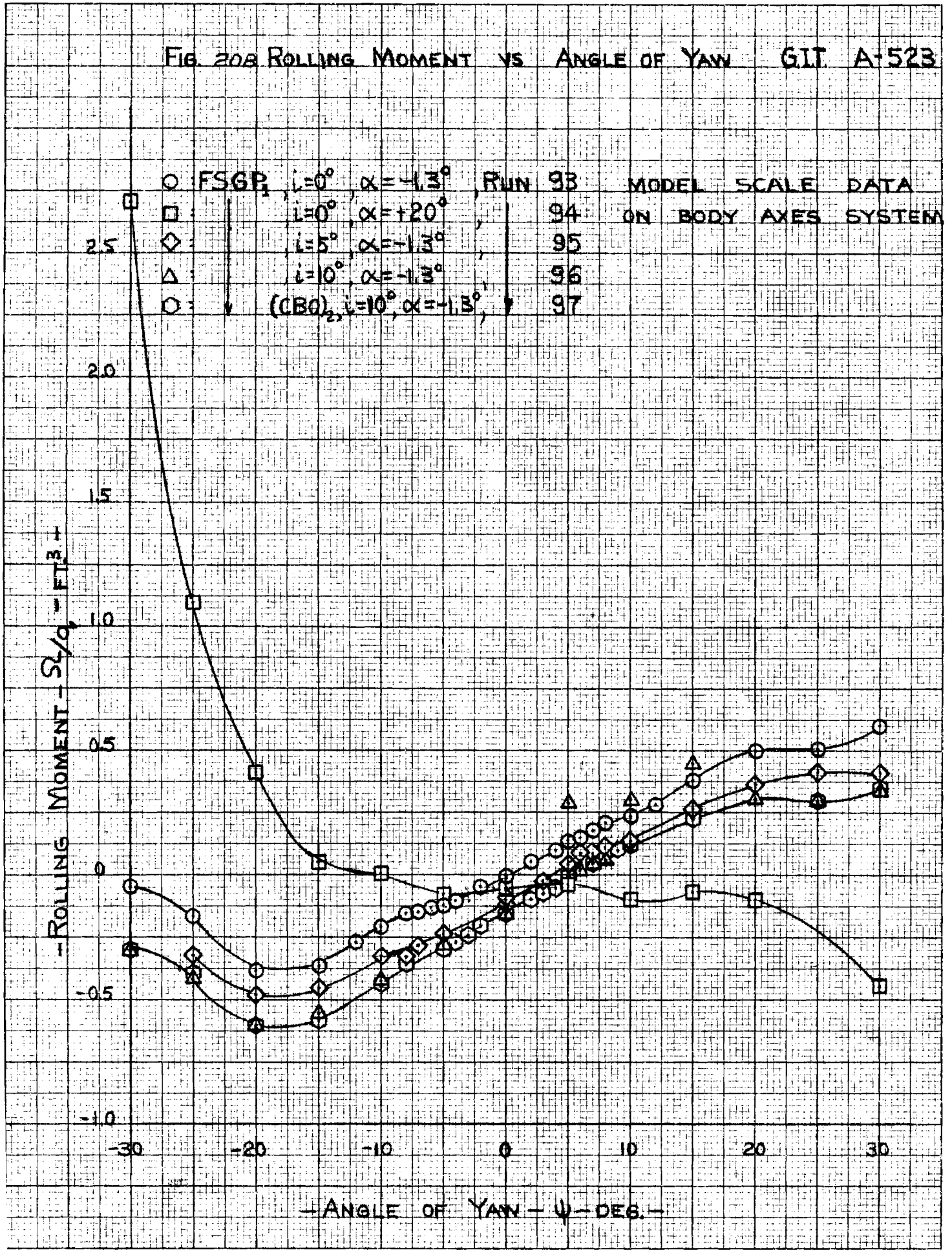


FIG. 21A SIDE FORCE VS ANGLE OF YAW G.I.T. A-523

$\alpha = -1.3°$

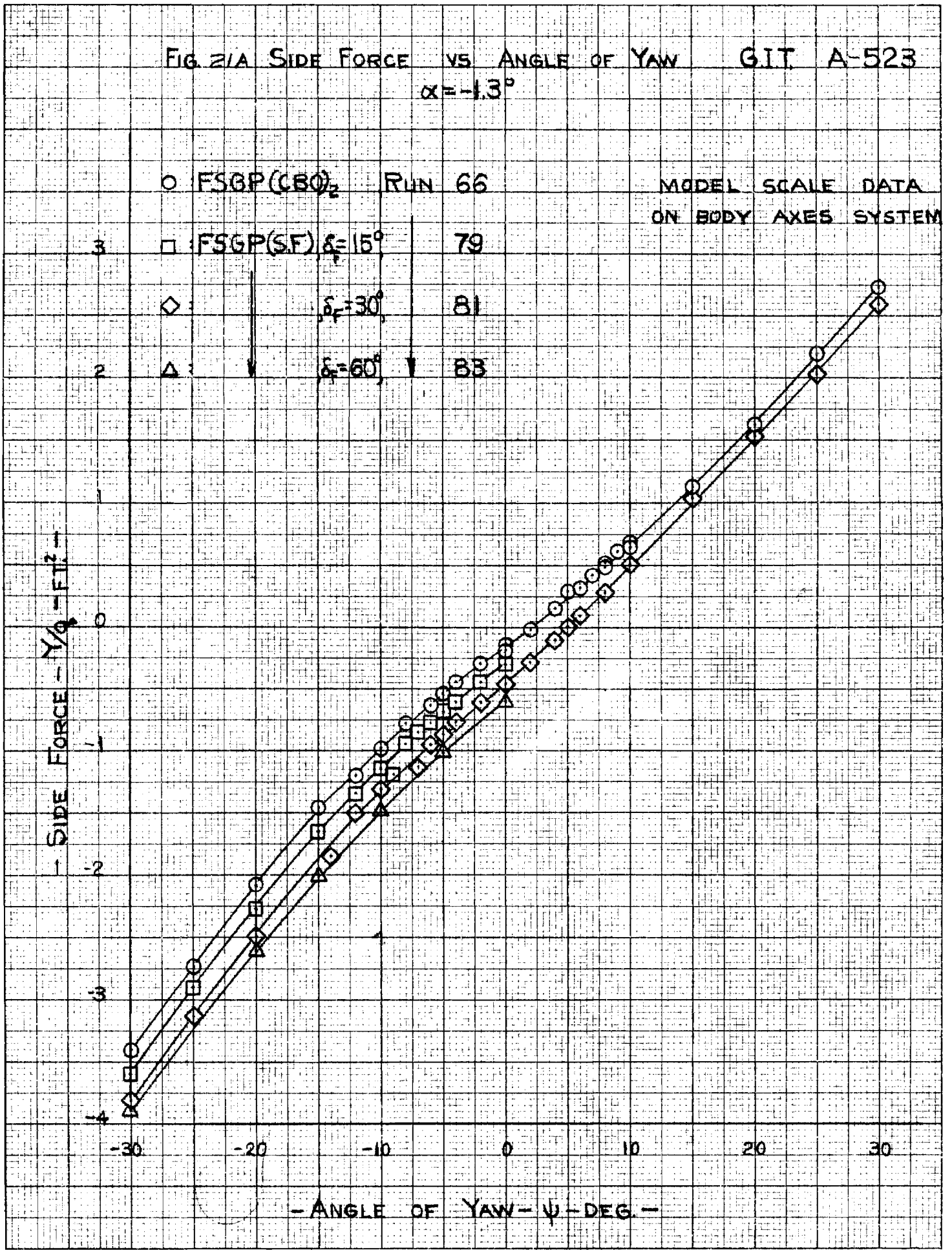
○ FSGP $(CBO)_2$ RUN 66

□ FSGP (S.F) $\delta_f = 15°$ 79

◇ $\delta_f = 30°$ 81

△ $\delta_f = 60°$ 83

MODEL SCALE DATA
ON BODY AXES SYSTEM



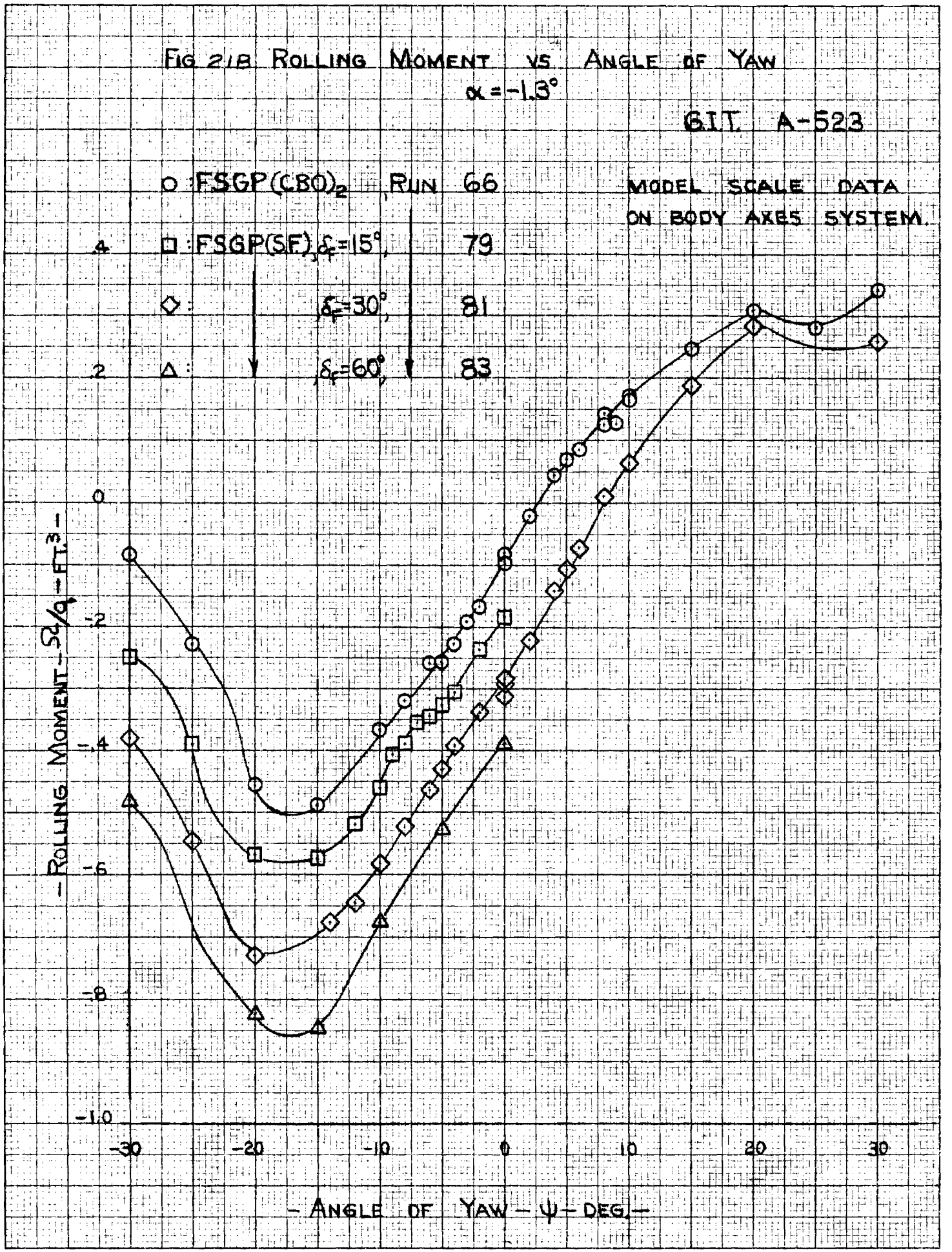


FIG 21B ROLLING MOMENT VS ANGLE OF YAW
α = -1.3°
G.I.T. A-523
○ : FSGP(CBO)2, RUN 66
□ : FSGP(SF), δf = 15°, 79
◇ : δf = 30°, 81
△ : δf = 60°, 83
MODEL SCALE DATA
ON BODY AXES SYSTEM.
4
2
0
-2
-4
-6
-8
-10
-30
-20
-10
0
10
20
30
- ROLLING MOMENT - Sℓ/q - FT.3 -
- ANGLE OF YAW - ψ - DEG. -

G.I.T. A-523

FIG. 22A SIDE FORCE VS ANGLE OF YAW

$\alpha = 20°$

○	FSGP $(CBO)_2$	RUN 67
□	FSGP(S.E.), $\delta_F = 15°$	80
△	$\delta_F = 30°$	82
◇	$\delta_F = 60°$	83

MODEL SCALE DATA
ON BODY AXES SYSTEM

- SIDE FORCE - Y/q_4 - FT^2 -

3
2
1
0
-1
-2
-3
-4
-5

-30 -20 -10 0 10 20 30

- ANGLE OF YAW - ψ - DEG. -

G.I.T. A-523

FIG. 22B ROLLING MOMENT VS ANGLE OF YAW

$\alpha = 20°$

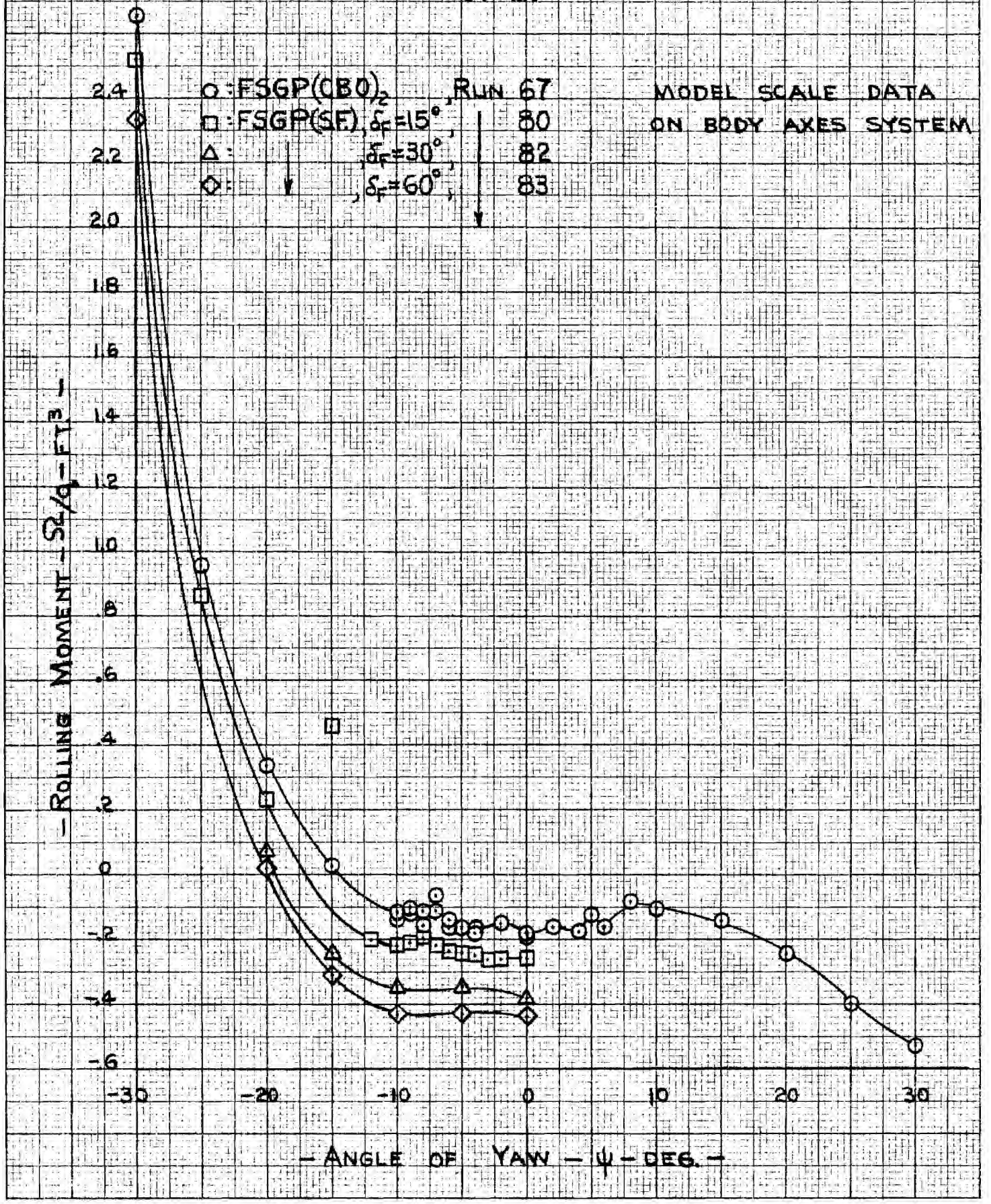


FIG 23A LIFT FORCE VS ANGLE OF YAW G.I.T. A-523

MODEL SCALE DATA

○	RUN 93	FSGP, $i_t = 0°$ $\alpha = -1.3°$
□	94	" $i_t = 0°$ $\alpha = +20°$ ON BODY AXIS SYSTEM
◇	95	" $i_t = 5°$ $\alpha = -1.3°$
△	96	" $i_t = 10°$ $\alpha = -1.3°$
⬡	97	@ CBO_2, $i_t = 10°$, $\alpha = -1.3°$

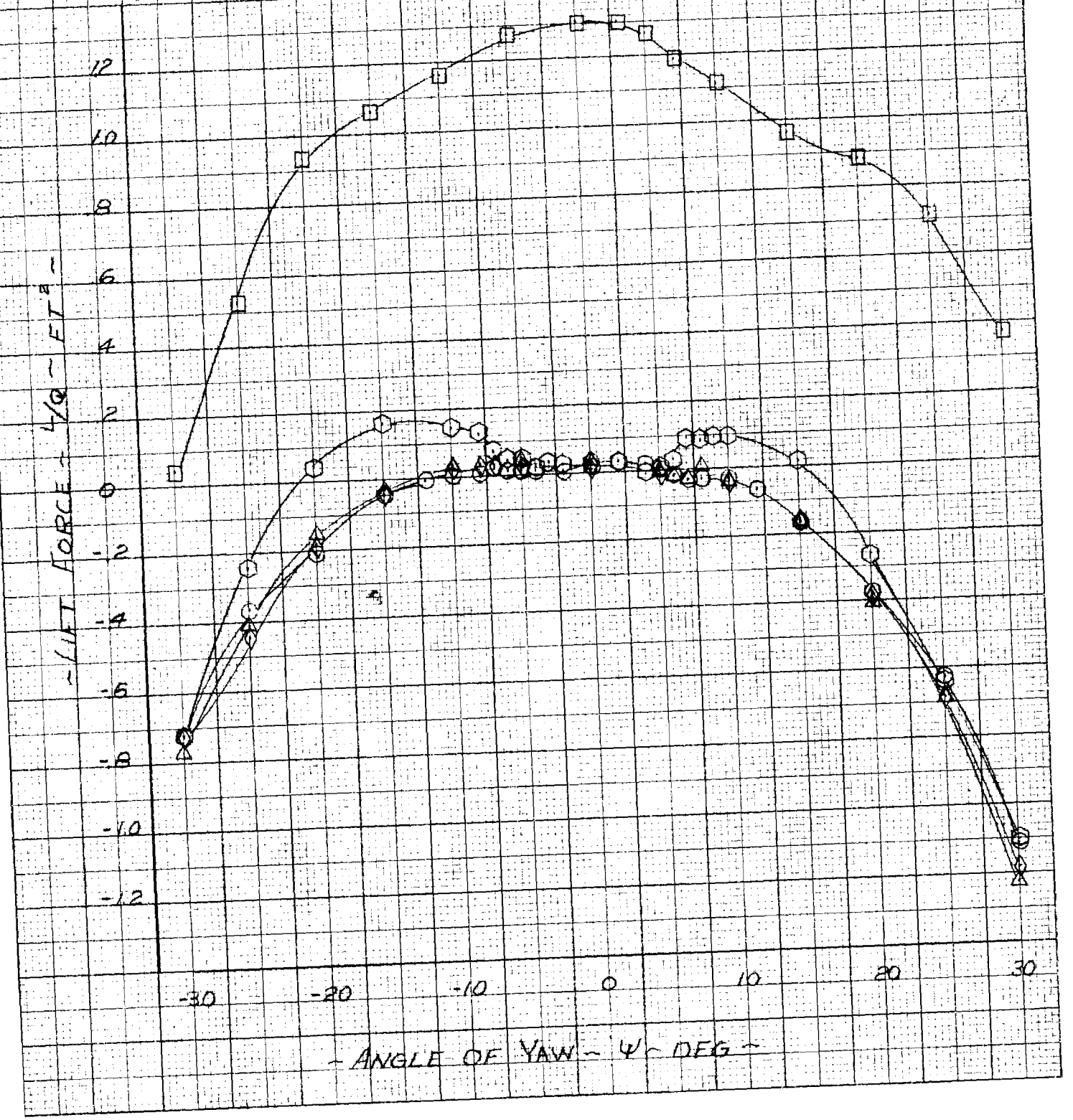


FIG 23B DRAG FORCE VS ANGLE OF YAW GIT A-523

	RUN		
⊙	93	FSGP	$i_t = 0°$ $\alpha = -1.3°$ MODEL SCALE DATA
□	94		$i_t = 0°$ $\alpha = +20°$ ON BODY AXIS SYSTEM
◇	95		$i_t = 5°$ $\alpha = -1.3°$
△	96		$i_t = 10°$ $\alpha = -1.3°$
⬡	97		$\overline{C}BO_2$ $i_t = 10°$ $\alpha = -1.3°$

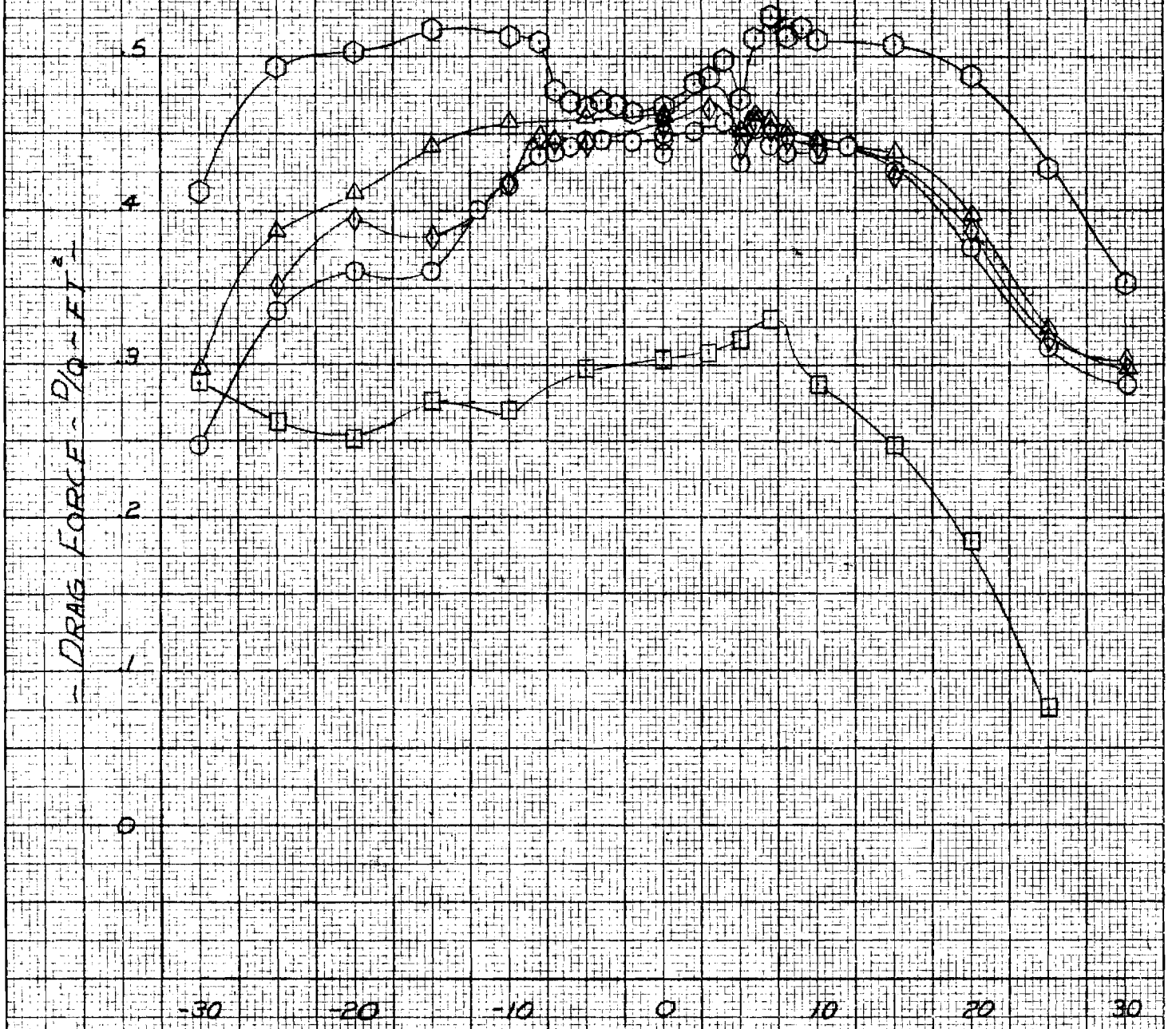


FIG 23c PITCHING MOMENT VS ANGLE OF YAW G.I.T.

A-523

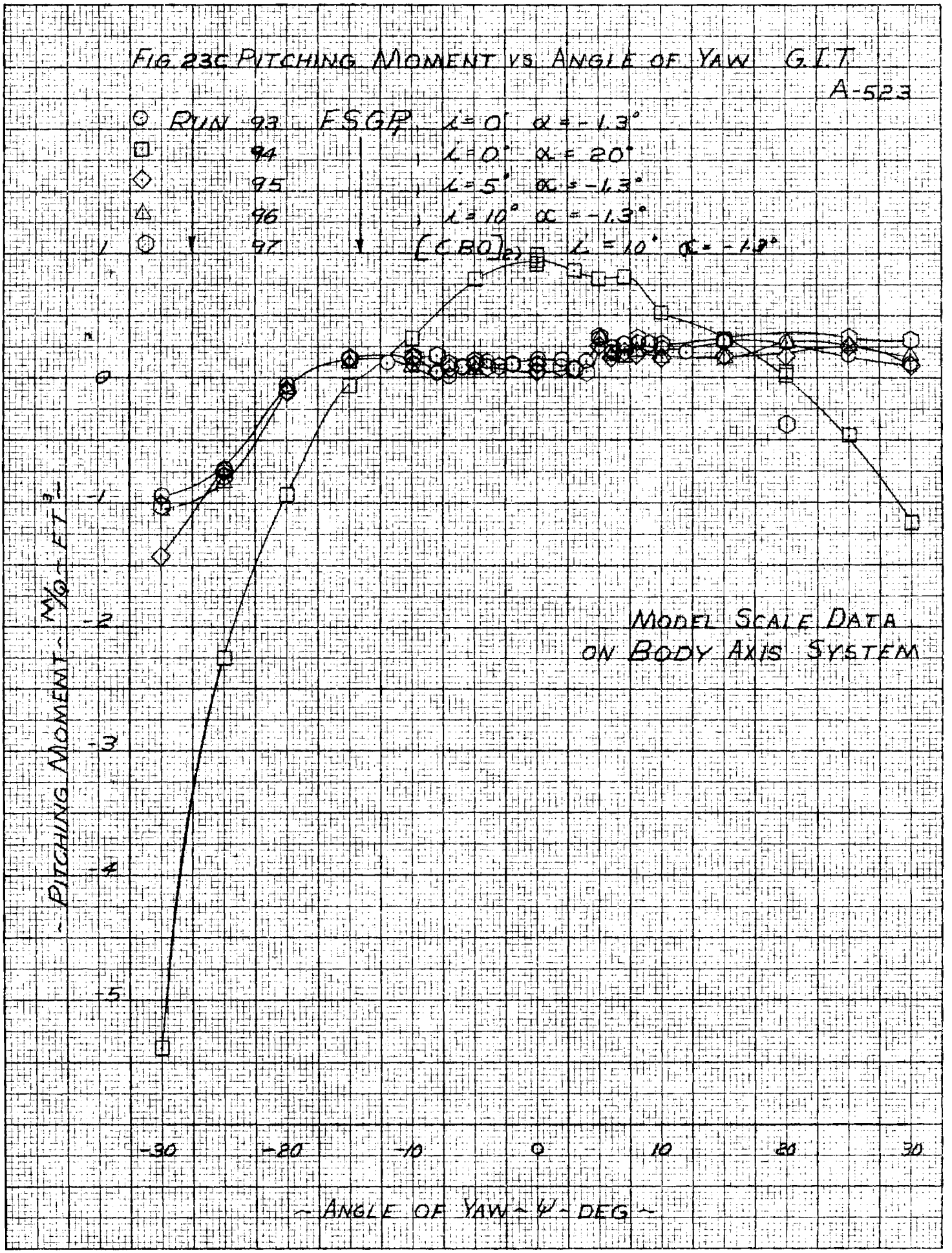


FIG 24A LIFT FORCE VS ANGLE OF YAW G.I.T. A-523

$\alpha = -1.3°$

○ RUN 66 FSGP(CBO)$_2$ MODEL SCALE DATA

□ 79 FSGP(S.F.)$_1$, $\delta_f = 15°$ ON BODY AXIS SYSTEM

◇ 81 , $\delta_f = 30°$

△ 88 , $\delta_f = 60°$

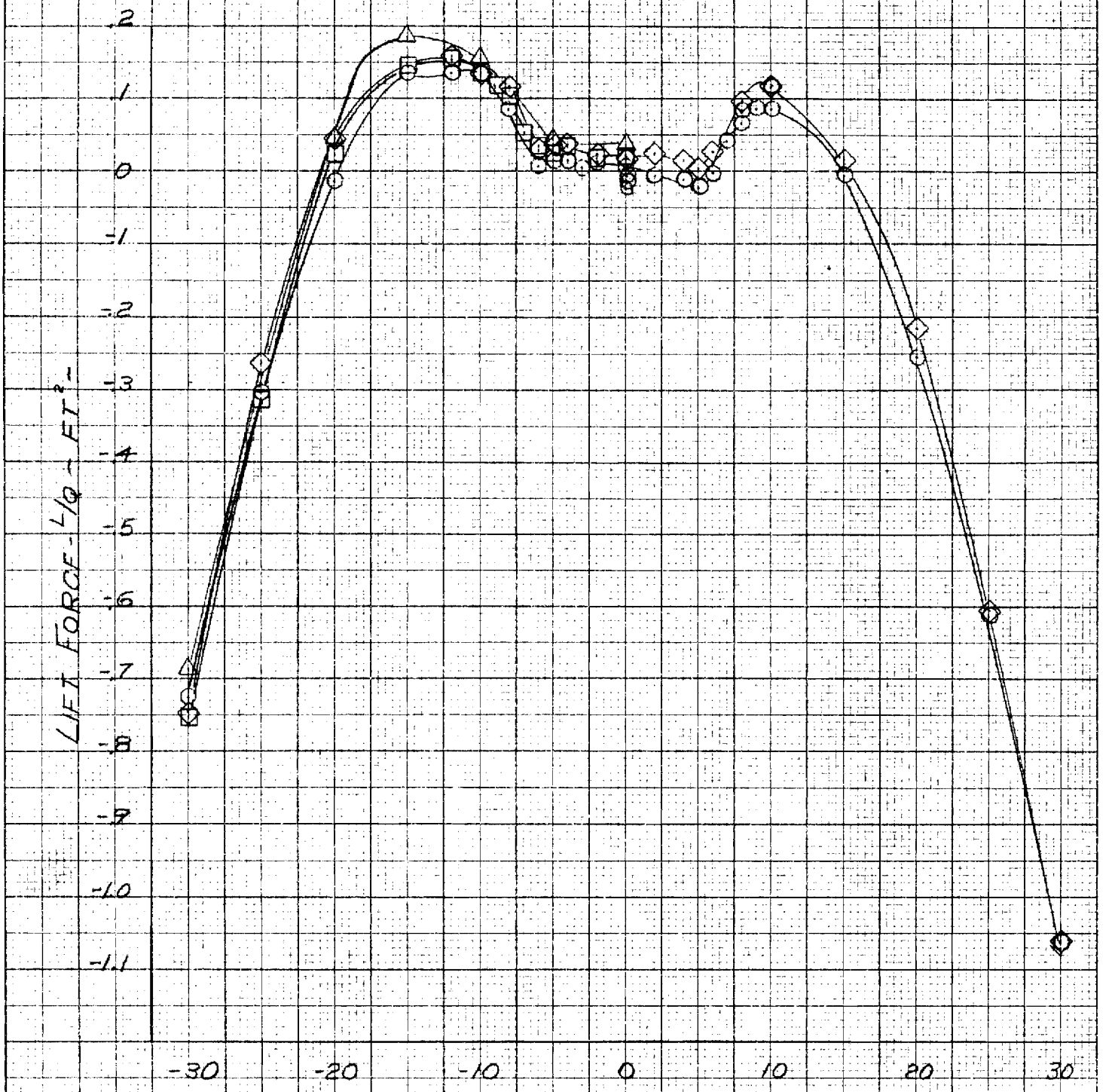


FIG 24B DRAG FORCE VS ANGLE OF YAW G.I.T. A-523

$\alpha = -1.3$

○ RUN 66 FSGP(CBO)$_2$

□ 79 FSGP(S.F), $\delta_f = 15°$

◇ 81 , $\delta_f = 30°$

△ 83$_A$, $\delta_f = 60°$

MODEL SCALE DATA ON BODY AXIS SYSTEM

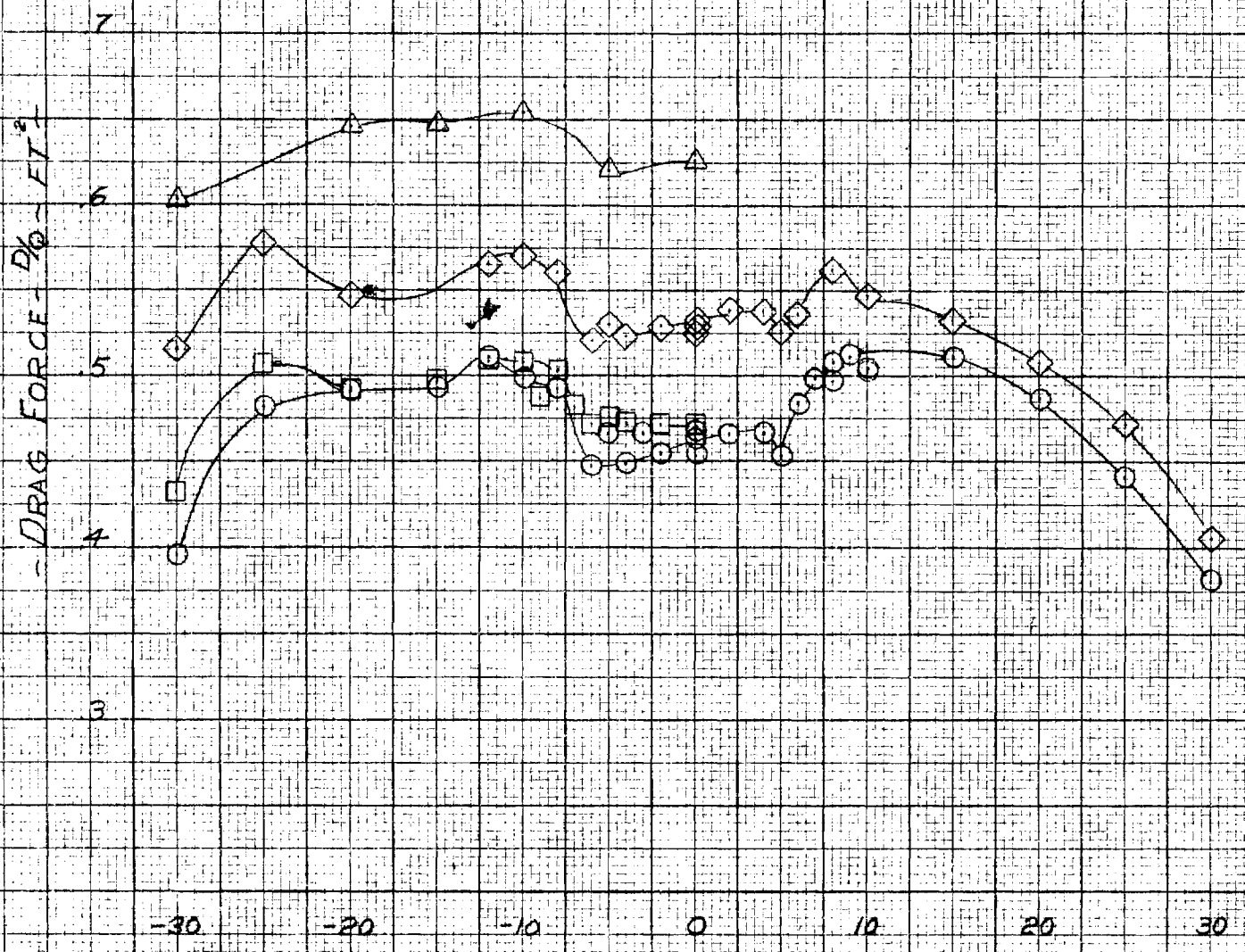


FIG 24C PITCHING MOMENT VS ANGLE OF YAW G.I.T.

A-523

$\alpha = -1.3$

○ RUN 66 FSGP(CBO)$_2$

□ 79 FSGP(S.F), $\delta_f = 15°$

◇ 81 , $\delta_f = 30°$

△ 83A , $\delta_f = 60°$

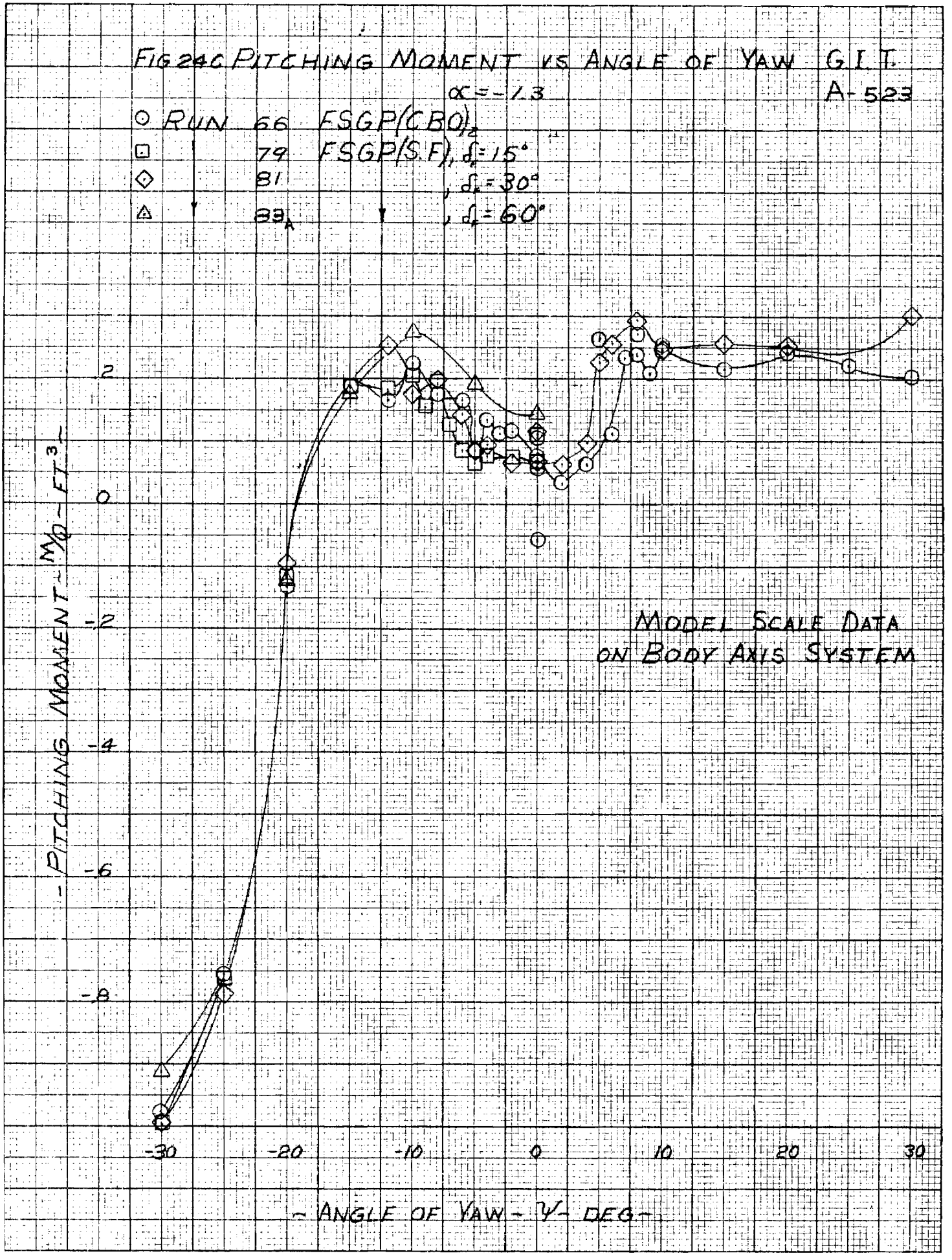


FIG 25A LIFT VS ANGLE OF YAW G.I.T. A-523

$\alpha = 20°$

○ : FSGP$(C_{BO})_2$, RUN 67

□ : FS6P(S,F), $\delta_F = 15°$, 80

△ : $\delta_F = 30°$, 82

◇ : $\delta_F = 60°$, 83

MODEL SCALE DATA ON BODY AXES SYSTEM

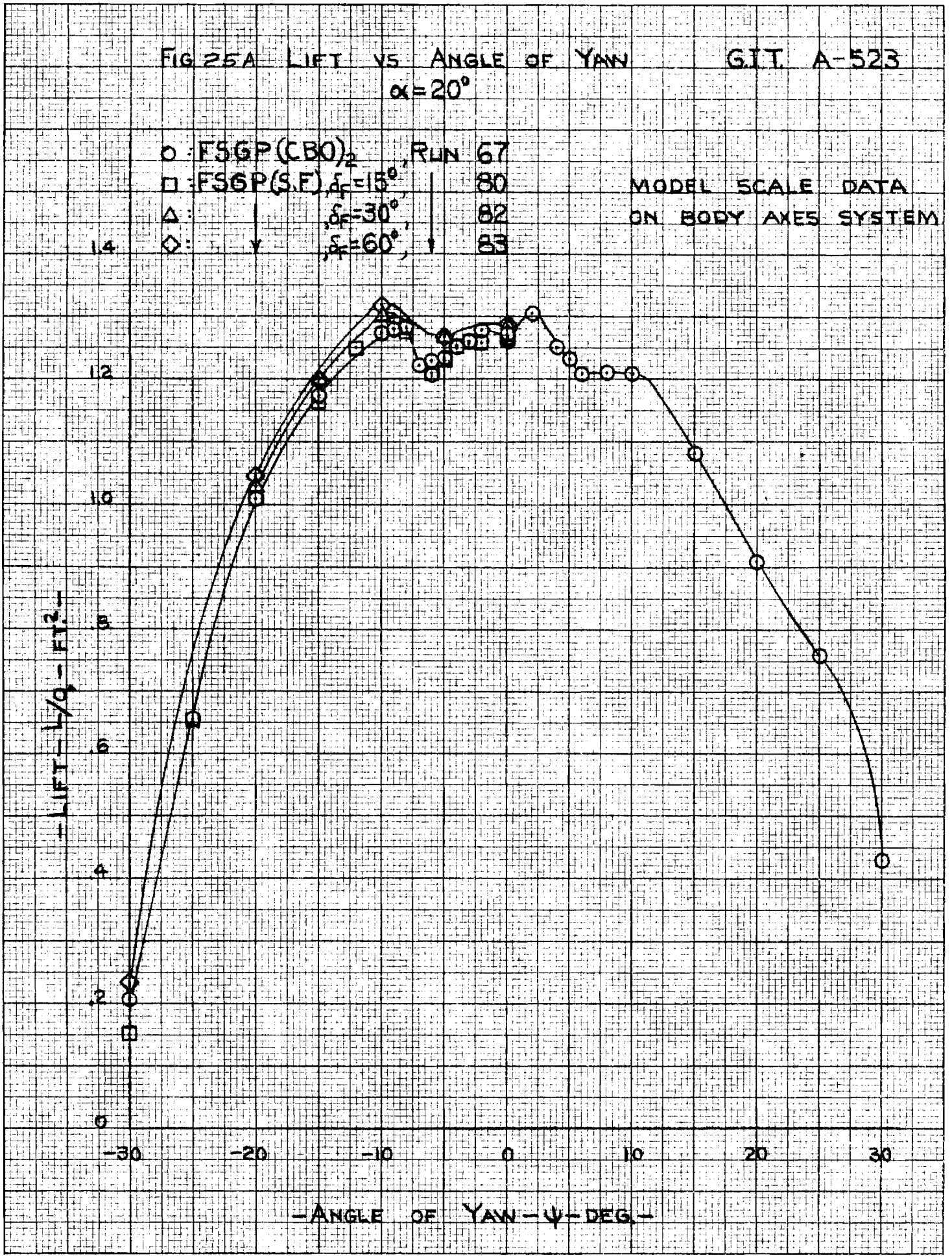


FIG 25B DRAG VS ANGLE OF YAW G.I.T. A-523

$\alpha = 20°$

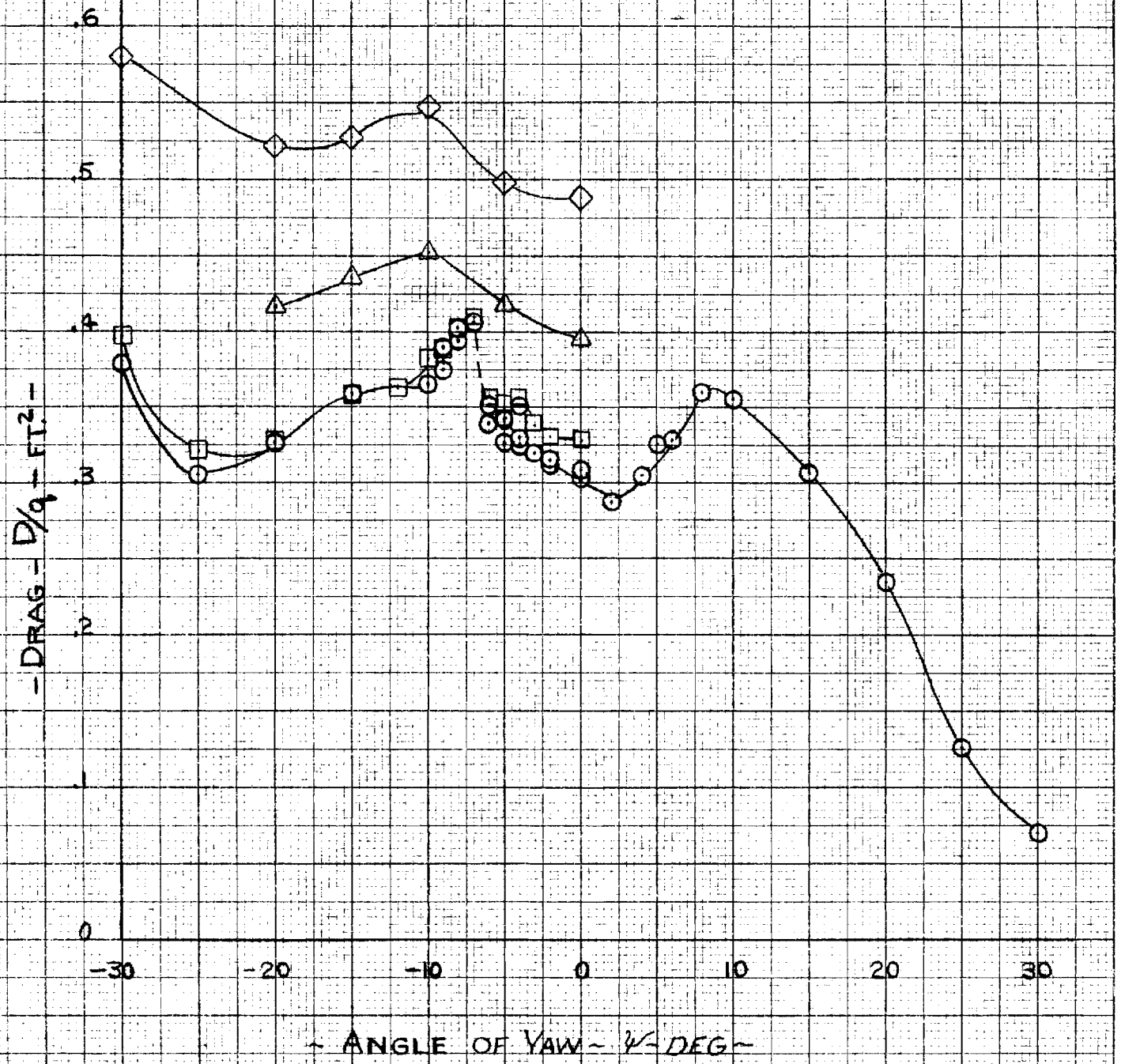
○ RUN 67, FSGP(CBO)$_2$

□ 80, FSGP(S.F), $\delta_f = 15°$

△ 82, , $\delta_f = 30°$

◇ 83, , $\delta_f = 60°$

MODEL SCALE DATA ON BODY AXIS SYSTEM



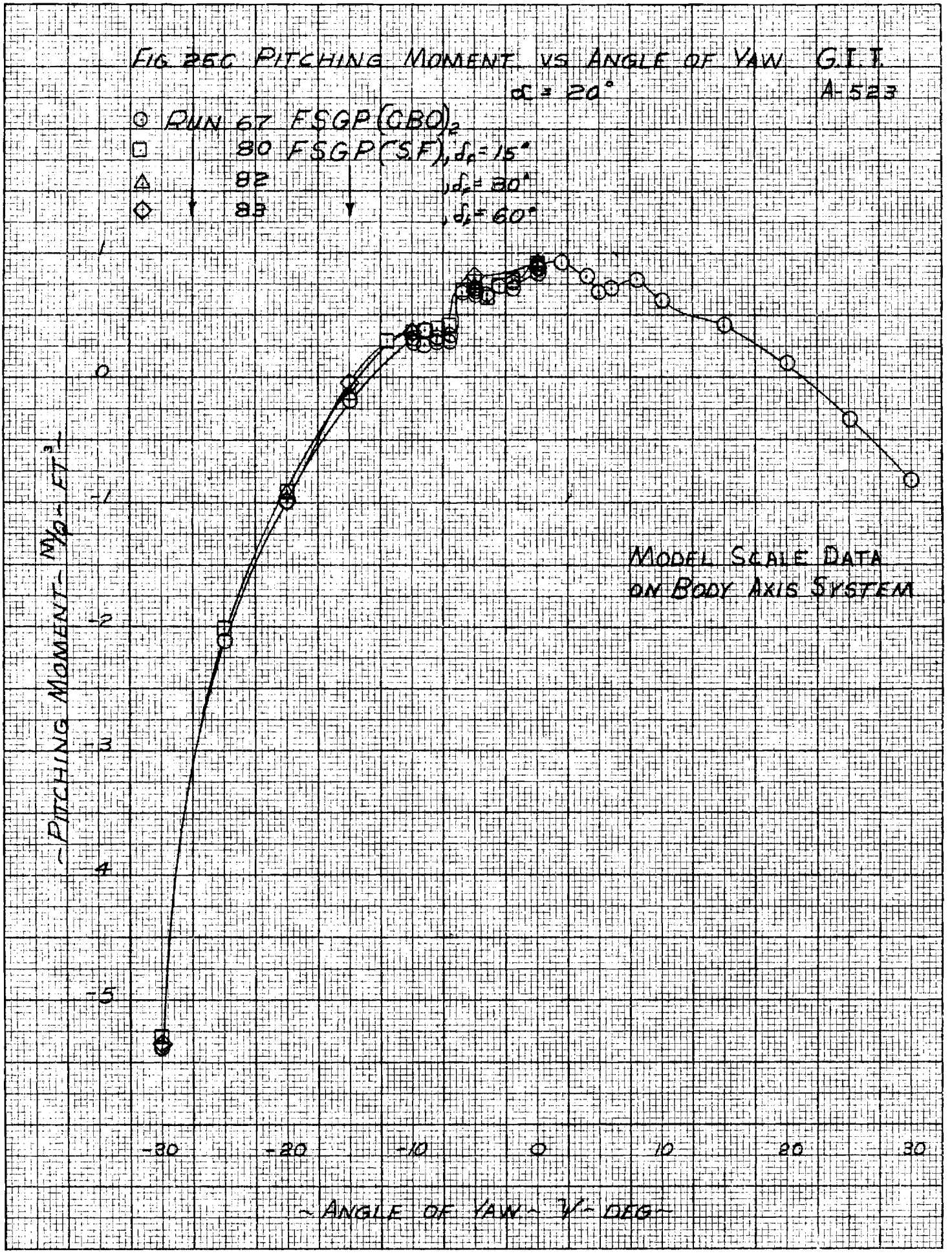


FIG 25C PITCHING MOMENT VS ANGLE OF YAW G.I.T.
A-523
α = 20°
⊙ RUN 67 FSGP (CBO)₂
□ 80 FSGP (SF)₁, δf = 15°
△ 82 , δf = 30°
◇ 83 , δf = 60°
MODEL SCALE DATA
ON BODY AXIS SYSTEM
-PITCHING MOMENT- My/q - FT³-
1
0
-1
-2
-3
-4
-5
-30
-20
-10
0
10
20
30
-ANGLE OF YAW - ψ - DEG-

DANIEL GUGGENHEIM SCHOOL
OF AERONAUTICS
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA

GROUP I

PITCH DATA

A = 522 PSI = 0 RUN NUMBER 12

ALPHA	L/Q	D/Q	M/Q
.00	.4332	.5130	-.3712
-20.00	-1.4036	.8058	-.4670
-15.00	-.8422	.6509	-.6230
-10.00	-.3509	.5396	-.6349
-7.50	-.1307	.5009	-.6450
-5.00	.0581	.4936	-.5680
-2.50	.2444	.4984	-.4944
-1.30	.3340	.4984	-.4663
.00	.4380	.5178	-.3467
2.50	.6413	.5299	-.2938
5.00	.8615	.5565	-.2093
7.50	1.0672	.5880	-.1135
10.00	1.3044	.6364	-.0065
15.00	1.7303	.7501	.1832
20.00	2.1393*	.9316	.4088
.00	.4429	.5154	-.3917
-7.50	-.1428	.5105	-.6128
-2.50	.2493	.4960	-.5176
-1.30	.3267	.5033	-.4554
.00	.4356	.5154	-.3916

A = 523 PSI = 0 RUN NUMBER 13

ALPHA	L/Q	D/Q	M/Q
.00	.1404	.4597	-.2373
-20.00	-1.0116	.7888	-.5182
-15.00	-.6486	.6291	-.6693
-10.00	-.3219	.5226	-.6042
-7.50	-.1815	.4767	-.6120
-5.00	-.0629	.4670	-.4806
-2.50	.0460	.4621	-.3601
-1.30	.0823	.4646	-.2859
.00	.1404	.4694	-.1890
2.50	.2468	.4549	-.1771
5.00	.3606	.4573	-.0992
7.50	.4961	.4839	.0422

A = 523 PSI = 0 RUN NUMBER 14

ALPHA	L/Q	D/Q	M/Q
.00	.5808	.5662	-.6128
-20.00	-1.2463	.8130	-.6175
-15.00	-.6945	.6533	-.8436
-10.00	-.1984	.5614	-.9394
-7.50	.0363	.5420	-.7896
-5.00	.2130	.5251	-.8060
-2.50	.4017	.5347	-.7337
-1.30	.5106	.5493	-.6927
.00	.5881	.5541	-.6811
2.50	.7623	.5783	-.5171
5.00	.9462	.6073	-.3653
7.50	.9849	.6388	-.3254
10.00	1.3165	.6896	-.0418
15.00	1.6674	.7937	.2384
20.00	1.9699	.9195	.3606
.00	.5687	.5831	-.5206
-10.00	-.2275	.5759	-.6983
-7.50	-.0097	.5565	-.7134
-5.00	.1767	.5493	-.6692
-2.50	.3727	.5565	-.6097
-2.50	.3703	.5662	-.5767
-1.30	.4671	.5662	-.5866
.00	.5639	.5831	-.4713

A = 523 PSI = 0 RUN NUMBER 15

ALPHA	L/D	D/D	M/D
.00	.4622	.5105	-.4592
-20.00	-1.3867	.8251	-.5084
-15.00	-.8301	.6533	-.7693
-10.00	-.3436	.5396	-.6860
-7.50	-.1186	.5033	-.7328
-5.00	.0920	.4888	-.6456
-2.50	.2565	.4960	-.5298
-1.30	.3630	.4984	-.5054
.00	.4671	.5105	-.4382
2.50	.6776	.5323	-.3126
5.00	.8857	.5589	-.2344
7.50	1.0890	.5831	-.1848
10.00	1.2947	.6315	-.0452
15.00	1.7255	.7380	.1266
20.00	2.1078	.9098	.3145
.00	.4501	.5299	-.3930
.00	.4501	.5251	-.3749
-7.50	-.1137	.5154	-.6224
-5.00	.0847	.5057	-.5765
-2.50	.2710	.5057	-.4722
-1.30	.3578	.5105	-.4187
.00	.4598	.5226	-.3699
2.50	.6607	.5372	-.3024
.00	.4574	.5275	-.3525

A = 523 PSI = 0 RUN NUMBER 16

ALPHA	L/Q	D/Q	M/Q
.00	.0266	.3653	-.1062
-20.00	-1.1326	.7259	-.4125
-15.00	-.7478	.5517	-.5556
-10.00	-.4114	.4355	-.4934
-7.50	-.2904	.3944	-.5092
-5.00	-.2154	.3750	-.4002
-2.50	-.0653	.3605	-.2471
-1.30	-.0315	.3605	-.2050
.00	.0387	.3581	-.1403
2.50	.1573	.3629	-.0424
5.00	.2952	.3799	.0839
7.50	.4501	.4065	.2280
10.00	.5856	.4404	.3818
15.00	.8325	.5275	.6042
20.00	1.1229	.7066	.8868
.00	.0363	.3750	-.0450
-7.50	-.2904	.4065	-.3640
-5.00	-.1815	.3823	-.2864
-2.50	-.0726	.3774	-.1850
-1.30	-.0097	.3774	-.0899
.00	.0315	.3774	-.0436
5.00	.3098	.3968	.1830
.00	.0315	.3774	-.0460

A - 523 PSI = 0 RUN NUMBER 17

ALPHA	L/Q	D/Q	M/Q
.00	.1670	.3774	-.1786
-20.00	-1.5319	.7646	-.3697
-15.00	-.9244	.5662	-.6523
-10.00	-.4743	.4379	-.5718
-7.50	-.3073	.4041	-.4615
-5.00	-.1767	.3726	-.4008
-2.50	-.0048	.3750	-.2681
-1.30	.0774	.3726	-.2422
.00	.1863	.3774	-.1820
2.50	.3993	.3871	-.1472
5.00	.6365	.4089	-.1005
7.50	.8664	.4452	-.0395
10.00	1.1011	.4960	.0232
15.00	1.5077	.6461	.3164
20.00	1.9094	.8106	.4371
.00	.1670	.3944	-.1019
-7.50	-.3146	.4258	-.3141
-5.00	-.1984	.4041	-.2386
-2.50	-.0073	.3920	-.1561
-1.30	.0726	.3944	-.0934
.00	.1791	.3895	-.0992
2.50	.3824	.4089	-.0285
.00	.1839	.3799	-.2137
-10.00	-.4888	.4646	-.4331
.00	.1791	.6340	1.4126

A - 523 PSI = 0 RUN NUMBER 19

ALPHA	L/Q	D/Q	M/Q
.00	-.1186	.3387	-.0352
-20.00	-.6534	.6606	-.5528
-15.00	-.4719	.5275	-.5628
-10.00	-.3122	.4258	-.4432
-7.50	-.2444	.3823	-.4070
-5.00	-.1888	.3605	-.3019
-2.50	-.1525	.3411	-.2187
-1.30	-.1331	.3508	-.0645
.00	-.1137	.3411	-.0210
.00	-.1113	.3460	.0076
2.50	-.0750	.3339	.0970
5.00	-.0436	.3266	.2383
7.50	-.0169	.3242	.3989
10.00	.0121	.3266	.5622
15.00	.0823	.3484	.9504
20.00	.1597	.3774	1.2565
.00	-.1162	.3484	-.0079
-5.00	-.1960	.3605	-.2969
-5.00	-.1960	.3653	-.2741
-2.50	-.1476	.3508	-.1980
-1.30	-.1379	.3484	-.0932
.00	-.1186	.3484	.0083

A = 523 PSI = 0 RUN NUMBER 21

ALPHA	L/Q	D/Q	M/Q
.00	.0605	.4670	-.2083
-20.00	-1.2705	.8445	-.6869
-15.00	-.7938	.6606	-.7062
-10.00	-.4332	.5323	-.6761
-7.50	-.2783	.4984	-.5957
-5.00	-.1718	.4791	-.4899
-2.50	-.0557	.4791	-.2917
-1.30	.0000	.4767	-.2393
.00	.0605	.4718	-.1708
2.50	.1646	.4742	-.0565
5.00	.2856	.4839	.1006
7.50	.4066	.4742	.0959
10.00	.5372	.4936	.1912
15.00	.7986	.5735	.5204
20.00	1.0793	.6969	.8278
.00	.0532	.4767	-.1792
-20.00	-1.2632	.8735	-.2162
-10.00	-.4404	.5565	-.9132
-5.00	-.1767	.4912	-.5783
-2.50	-.0726	.4839	-.2887
-1.30	-.0048	.4815	-.2107
.00	.0411	.4791	-.1704

A - 523 PSI = 0 RUN NUMBER 24

ALPHA	L/Q	D/Q	M/Q
.00	.3364	.5517	-.4706
-20.00	-1.6964	.9365	-.4350
-15.00	-1.0745	.7211	-.6071
-10.00	-.4961	.5856	-.7630
-7.50	-.2686	.5517	-.7320
-5.00	-.0750	.5347	-.6826
-2.50	.1379	.5396	-.5623
-1.30	.2251	.5444	-.5484
.00	.3340	.5541	-.4757
.00	.3364	.5541	-.4845
2.50	.5300	.5686	-.3836
5.00	.7720	.5880	-.2986
7.50	.9438	.6122	-.1778
.00	.3340	.5614	-.4811

A - 523 PSI = 0 RUN NUMBER 25

ALPHA	L/Q	D/Q	M/O
.00	-.0387	.4742	-.1419
-20.00	-1.3721	.9002	-.5012
-15.00	-.8930	.6775	-.6410
-10.00	-.5082	.5396	-.7039
-7.50	-.3727	.5105	-.6023
-5.00	-.2662	.4912	-.4319
-2.50	-.1525	.4767	-.2940
-1.30	-.1065	.4742	-.2571
.00	-.0411	.4718	-.1651
.00	-.0290	.4694	-.1762
2.50	.0750	.4646	-.0476
5.00	.1815	.4670	.0367
7.50	.3340	.4742	.2017
.00	-.0363	.4718	-.1780

A - 523 PSI = 0 RUN NUMBER 26

ALPHA	L/Q	D/Q	M/Q
.00	.1791	.5372	-.3341
-20.00	-1.8319	.9655	-.3658
-15.00	-1.2027	.7235	-.6902
-10.00	-.6461	.5928	-.6217
-7.50	-.4259	.5468	-.6279
-5.00	-.2299	.5251	-.5512
-2.50	-.0218	.5202	-.4529
-1.30	.0629	.5202	-.4562
.00	.1839	.5275	-.3857
2.50	.3630	.5396	-.2576
5.00	.5808	.5662	-.1464
7.50	.7938	.5831	-.0996
.00	.1646	.5372	-.3751

A = 523 PSI = 0 RUN NUMBER 27

ALPHA	L/Q	D/Q	M/Q
.00	-.1186	.4670	-.1962
-20.00	-1.4399	.9219	-.3894
-15.00	-.9535	.6945	-.5724
-10.00	-.6026	.5517	-.6446
-7.50	-.4235	.5057	-.5533
-5.00	-.3267	.4912	-.4143
-2.50	-.2081	.4718	-.2861
-1.30	-.1694	.4718	-.2271
.00	-.0920	.4621	-.1839
2.50	.0194	.4573	-.0872
5.00	.1549	.4549	.0487
7.50	.2565	.4621	.2129
.00	-.1041	.4646	-.1994

A = 523 PSI = 0 RUN NUMBER 28

ALPHA	L/Q	D/Q	M/Q
.00	-.0048	.5081	-.3646
-20.00	-2.0207	1.0236	-.2623
-15.00	-1.4133	.7646	-.5087
-10.00	-.8301	.6025	-.6664
-7.50	-.5905	.5541	-.6180
-5.00	-.3826	.5202	-.5340
-2.50	-.1960	.5130	-.4132
-1.30	-.1016	.5130	-.3825
.00	.0121	.5081	-.3180
2.50	.1936	.5105	-.2632
5.00	.3945	.5323	-.1434
7.50	.6413	.5638	.0411
.00	-.0048	.5154	-.3290

A = 523 PSI = 0 RUN NUMBER 35

ALPHA	L/Q	D/Q	M/Q
.00	.2420	.4089	-.2240
-20.00	-1.6529	.7840	-.5426
-15.00	-.9970	.5831	-.6621
-10.00	-.5324	.4670	-.6995
-7.50	-.3122	.4283	-.5960
-5.00	-.1379	.4089	-.5261
-2.50	.0169	.4016	-.3954
-1.30	.0847	.4065	-.3092
.00	.2468	.4065	-.2376
2.50	.4622	.4186	-.1980
5.00	.7042	.4476	-.0816
7.50	.9559	.4791	-.0281
.00	.2323	.4162	-.2835
-1.30	.1089	.4113	-.2955
.00	.2493	.4137	-.2132
-2.50	.0073	.4113	-.3067
-5.00	-.1355	.4137	-.4638
-4.00	-.0750	.4041	-.5111
.00	.2541	.4065	-.2304

A = 523 PSI = 0 RUN UMBER 36

ALPHA	L/D	D/D	M/D
.00	.4235	.5565	-.4750
-20.00	-1.4593	.8711	-.6193
-15.00	-.8543	.6751	-.8111
-10.00	-.3703	.5710	-.7943
-7.50	-.1210	.5396	-.8012
-5.00	.0508	.5299	-.7003
-2.50	.2275	.5396	-.5919
-1.30	.3091	.5396	-.5812
.00	.4114	.5565	-.4669
2.50	.5832	.5662	-.3666
5.00	.7623	.5807	-.2700
7.50	.9583	.6049	-.0999
.00	.4162	.5541	-.5167

A = 523 PSI = 0 RUN NUMBER 38

ALPHA	L/Q	D/Q	M/Q
.00	.1597	.4113	-.2913
-20.00	-1.5996	.8155	-.6118
-15.00	-1.0454	.5928	-.7584
-10.00	-.5348	.4646	-.7369
-7.50	-.3461	.4307	-.5912
-5.00	-.1984	.4041	-.5241
-2.50	-.0169	.3944	-.4296
-1.30	.0726	.4016	-.3312
.00	.1573	.4065	-.3223
2.50	.3920	.4283	-.1607
5.00	.5953	.4525	-.1097
7.50	.8567	.5033	-.0139
.00	.1960	.4331	-.2185

A = 523 PSI = 0 RUN NUMBER 40

ALPHA	L/Q	D/Q	M/Q
.00	.5082	.5759	-.6461
-20.00	-1.4399	.8735	-.7060
-15.00	-.8252	.6727	-.9124
-10.00	-.3315	.5638	-1.0433
-7.50	-.1016	.5444	-1.0582
-5.00	.1137	.5299	-.8889
-2.50	.3073	.5444	-.7929
-1.30	.4066	.5614	-.7039
.00	.5155	.5710	-.6570
2.50	.6970	.5856	-.6022
5.00	.8809	.6073	-.5180
7.50	1.0624	.6364	-.3480
.00	.4864	.5783	-.7082

A - 523 PSI = 0 RUN NUMBER 41

ALPHA	L/Q	D/Q	M/Q
.00	.1016	.4863	-.3378
-20.00	-1.1543	.8227	-.7599
-15.00	-.7671	.6412	-.8618
-10.00	-.4187	.5347	-.8335
-7.50	-.2444	.4984	-.7476
-5.00	-.1379	.4815	-.6749
-2.50	-.0290	.4815	-.5126
-1.30	.0339	.4767	-.4680
.00	.0895	.4791	-.3870
2.50	.1960	.4912	-.2208
5.00	.3436	.4936	-.2063
7.50	.4888	.5154	-.0722
.00	.0871	.4863	-.3788
.00	.0871	.4984	-.2984

A = 523 PSI = 0 RUN NUMBER 44

ALPHA	L/Q	D/Q	M/Q
.00	.1331	.5009	-.3748
-20.00	-1.0793	.8106	-.8395
-15.00	-.6897	.6606	-.9463
-10.00	-.3509	.5493	-.9077
-7.50	-.2057	.5178	-.8312
-5.00	-.0968	.5033	-.7131
-2.50	.0169	.4960	-.5938
-1.30	.0726	.4984	-.4770
.00	.1355	.4984	-.4327
2.50	.2396	.5057	-.2970
5.00	.3630	.5081	-.4620
7.50	.4864	.5275	-.1010
.00	.1283	.5033	-.4484
.00	.1283	.5009	-.6523
.00	.1258	.5057	-.3808
7.50	.5058	.5299	-.0888
10.00	.6389	.5589	.0405
15.00	.8930	.5436	.3498
20.00	1.1471	.7792	.5748
.00	.1331	.5033	-.4057

A = 523 PSI = 0 RUN NUMBER 47

ALPHA	L/Q	D/Q	M/Q
.00	.4671	.5904	-.6825
-20.00	-1.3867	.8905	-.7676
-15.00	-.7986	.7066	-.9624
-10.00	-.3122	.6146	-.9940
-7.50	-.0871	.5831	-.9588
-5.00	.1041	.5735	-.8994
-2.50	.2856	.5759	-.8386
-1.30	.3799	.5856	-.7818
.00	.4719	.5977	-.6937
.00	.4646	.5977	-.6839
2.50	.6558	.6122	-.5581
5.00	.7986	.6243	-.4757
7.50	.9801	.6267	-.4540
.00	.4743	.5952	-.7782
-5.00	.0944	.5686	-1.0075
-7.50	-.0968	.5880	-.9607
-5.00	.1065	.5759	-.8957
-5.00	.1113	.5759	-.8918
.00	.4695	.5977	-.7162

A - 52? PSI = 0 RUN NUMBER 49

ALPHA	L/Q	D/Q	M/Q
.00	.2323	.4234	-.4245
-20.00	-1.6553	.8348	-.2673
-15.00	-1.0140	.6170	-.8208
-10.00	-.4985	.4888	-.8185
-7.50	-.3219	.4404	-.8481
-5.00	-.1404	.4186	-.7353
-2.50	.0242	.4162	-.5616
-1.30	.1065	.4162	-.5129
.00	.2226	.4210	-.4669
.00	.1742	.4234	-.3611
2.50	.3993	.4258	-.3767
5.00	.6437	.4549	-.3299
7.50	.8712	.4936	-.1642
.00	.1912	.4210	-.4659

A - 523 PSI = 0 RUN NUMBER 51

ALPHA	L/Q	D/Q	M/Q
.00	.1525	.5372	-.5339
-20.00	-1.7279	1.0163	-1.7020
-15.00	-1.1035	.7598	-1.8622
-10.00	-.5469	.5904	-1.3021
-7.50	-.3678	.5468	-1.2263
-5.00	-.1670	.5299	-.9856
-2.50	.0145	.5347	-.7811
-1.30	.0944	.5372	-.6696
.00	.1525	.5468	-.5073
2.50	.2880	.5589	-.3198
5.00	.4114	.5807	-.0132
7.50	.5566	.6049	.2503
.00	.1476	.5468	-.5186

A - 523 PSI = 0 RUN NUMBER 52

ALPHA	L/Q	D/Q	M/Q
.00	.1646	.5614	-.3559
-20.00	-1.4738	.9824	-.9580
-15.00	-.9099	.7308	-1.0530
-10.00	-.4719	.5928	-.9252
-7.50	-.2952	.5468	-.8717
-5.00	-.1379	.5347	-.7372
-2.50	.0290	.5444	-.5673
.00	.1500	.5541	-.4059
-1.30	.0726	.5468	-.4897
.00	.1646	.5493	-.4266
2.50	.3001	.5614	-.2021
5.00	.4356	.5759	-.0317
7.50	.5614	.6049	.1914
.00	.1597	.5589	-.3483
-10.00	-.5009	.6025	-.8157
.00	.1549	.5565	-.3965
7.50	.5711	.6049	.1584
10.00	.7139	.6340	.3858
15.00	.9970	.7477	.8001
20.00	1.2899	.8977	1.2149
.00	.1742	.5565	-.3902

A - 523 PSI = 0 RUN NUMBER 53

ALPHA	L/Q	D/Q	M/Q
.00	.0315	.5057	-.2094
-20.00	-1.5657	.9824	-.8238
-15.00	-1.0454	.7356	-.8473
-10.00	-.6195	.5856	-.7423
-7.50	-.4138	.5444	-.6248
-5.00	-.2638	.5251	-.5048
-2.50	-.1016	.5057	-.3855
-1.30	-.0339	.5081	-.2669
.00	.0436	.5057	-.1861
2.50	.1936	.5081	.0006
5.00	.3315	.5081	.1131
7.50	.5009	.5396	.3068
10.00	.6534	.5926	.5338
15.00	.9801	.7066	.8118
20.00	1.3262	.8832	1.2226
.00	.0339	.5081	-.2032

A - 523 PSI = 0 RUN NUMBER 61

ALPHA	L/D	D/D	M/D
.00	.3049	.5323	-.2484
-20.00	-1.5222	.9098	-.3852
-15.00	-.9414	.7259	-.5046
-10.00	-.4550	.6049	-.5029
-7.50	-.2347	.5614	-.4971
-5.00	-.0290	.5347	-.4699
-2.50	.1355	.5347	-.2931
-1.30	.2105	.5323	-.2849
.00	.3364	.5323	-.2382
2.50	.5106	.5372	-.1852
5.00	.7260	.5517	-.1305
7.50	.9365	.5952	.0206
10.00	1.1422	.6315	.0859
15.00	1.5536	.7404	.2481
20.00	1.9699	.9171	.4492
.00	.3073	.5372	-.2513
2.50	.5590	.5468	-.1279
5.00	.7284	.5589	-.0962
2.50	.5251	.5468	-.1464
.00	.3194	.5372	-.2570

A - 523 PST = 0 RUN NUMBER 62

ALPHA	L/Q	D/Q	M/Q
.00	.5808	.6267	-.4673
-20.00	-1.3770	.8977	-.4907
-15.00	-.7865	.7308	-.5752
-10.00	-.2759	.6291	-.6321
-7.50	-.0460	.6049	-.6225
-5.00	.1718	.5952	-.6002
-2.50	.3751	.5952	-.6000
-1.30	.4574	.6098	-.5261
.00	.5711	.6219	-.4668
2.50	.7623	.6364	-.3810
5.00	.9535	.6557	-.3254
7.50	1.1374	.6896	-.1618
10.00	1.2874	.7162	-.0946
15.00	1.6625	.8130	.1318
20.00	2.0376	.9800	.3368
1.00	.6340	.6315	-.4605
.00	.5711	.6219	-.5079

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GROUP II

PITCH DATA

PITCH DATA

A - 523 PSI = 0 RUN NUMBER 63

ALPHA	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	-.0854	.2746	.8238	-.2444	.1820	-.1218
-20.00	-.5445	.5541	.0998	-.1331	.0391	-.0481
-15.00	-.4441	.4481	.2725	-.1452	.1248	-.0894
-10.00	-.3098	.3658	.4648	-.2130	.1603	-.1345
-7.50	-.2505	.3339	.6011	-.2372	.1801	-.1494
-5.00	-.2009	.3165	.7021	-.2541	.1778	-.2366
-2.50	-.1464	.2957	.7718	-.2154	.1808	-.2321
-1.30	-.1241	.2831	.8013	-.2396	.1868	-.2200
.00	-.0951	.2770	.8290	-.2420	.2191	-.1366
2.50	-.0477	.2773	.7944	-.2226	.1707	-.1114
5.00	-.0140	.2758	.8214	-.1984	.1364	-.1056
7.50	.0169	.2746	.8754	-.1936	.1104	-.0945
10.00	.0424	.2811	.9113	-.1984	.0909	-.0801
15.00	.1157	.2940	1.2117	-.2517	.1360	-.0705
20.00	.2130	.3351	1.5892	-.3219	.2307	-.0710
.00	-.0757	.2746	.8366	-.2251	.2004	-.1223

PITCH DATA

A - 523

PSI = 0

RUN NUMBER 64

ALPHA	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	-.0194	.3218	.5710	-.2831	.2638	-.1206
-20.00	-1.1882	.6073	.0550	-.1331	-.0045	.0100
-15.00	-.8446	.4573	.3826	-.2275	.1120	-.0532
-10.00	-.5372	.3605	.5254	-.2807	.2397	-.1155
-7.50	-.4138	.3436	.5206	-.3049	.2758	-.1313
-5.00	-.2928	.3363	.5006	-.3122	.2977	-.1365
-2.50	-.1742	.3242	.5245	-.2952	.2958	-.1218
-1.30	-.0968	.3242	.5419	-.3073	.2885	-.1146
.00	-.0169	.3218	.5742	-.2856	.2824	-.1323
2.50	.1186	.3242	.6531	-.2735	.2627	-.1381
5.00	.2565	.3145	.8668	-.2565	.1870	-.1103
7.50	.3824	.3581	.7762	-.2323	.1262	-.0878
10.00	.5227	.3871	.8672	-.2178	.0697	-.0903
15.00	.7696	.4718	1.0081	-.2154	.0278	-.0874
20.00	1.1447	.6799	1.0047	-.2977	.1862	-.0816
.00	-.0169	.3194	.6070	-.2807	.2839	-.1137
-5.00	-.2928	.3290	.5266	-.3001	.2942	-.1314
.00	-.0242	.3242	.5874	-.2783	.2896	-.1213

PITCH DATA

A - 523

PSI = 0

RUN NUMBER 65

ALPHA	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0944	.4500	-.0925	-.2130	.2479	-.1412
-20.00	-.9607	.7150	-.4497	-.1428	.1044	-.9797
-15.00	-.6425	.5928	-.4103	-.1258	.1374	-.0819
-10.00	-.3678	.4924	-.2459	-.1597	.1928	-.1481
-7.50	-.2444	.4803	-.2600	-.1863	.1955	-.1546
-5.00	-.1210	.4658	-.1775	-.1863	.1988	-.1692
-2.50	-.0121	.4634	-.1784	-.1984	.2249	-.1334
-1.30	.0387	.4621	-.1529	-.2081	.2357	-.1428
.00	.1113	.4573	-.1152	-.2178	.2608	-.1331
2.50	.2130	.4573	-.0580	-.2009	.2311	-.1096
5.00	.3509	.4646	.0186	-.1815	.2486	-.1102
7.50	.4586	.4779	.0659	-.1670	.2163	-.0903
10.00	.5869	.5105	.1215	-.1621	.1253	-.0908
15.00	.8531	.6001	.2640	-.1621	.1120	-.0546
20.00	1.1386	.7259	.6026	-.2033	.2466	-.0679
.00	.1089	.4500	-.0684	-.2009	.2324	-.1285
-10.00	-.3509	.4924	-.2530	-.1379	.1919	-.1454
-5.00	-.1258	.4706	-.2036	-.1670	.2265	-.1534
-7.50	-.2420	.4755	-.2298	-.1428	.2134	-.1656
-2.50	-.0121	.4682	-.2029	-.1936	.2579	-.1390
.00	.0992	.4597	-.1229	-.1984	.2647	-.1410

PITCH DATA

A - 523 PSI = 0 RUN NUMBER 74

ALPHA	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.1113	.4452	-.0916	-.1936	.2638	-.1538
-20.00	-.9511	.7054	-.4409	-.1186	.1831	-.0978
-15.00	-.5990	.5735	-.4007	-.1089	.1832	-.1487
-10.00	-.3436	.4948	-.2693	-.0992	.2347	-.1970
-7.50	-.2396	.4755	-.1928	-.1113	.2617	-.2201
-5.00	-.1234	.4755	-.2202	-.1283	.2700	-.2209
-2.50	-.0194	.4634	-.1323	-.1428	.2886	-.1888
-1.30	.0484	.4670	-.1549	-.1452	.2752	-.1748
.00	.0968	.4573	-.0836	-.1476	.2981	-.1707
2.50	.2130	.4549	.0038	-.1573	.3182	-.1617
5.00	.3388	.4573	.0934	-.1621	.3737	-.1489
7.50	.4417	.4730	.1206	-.1670	.3615	-.1024
10.00	.5844	.5081	.1655	-.1621	.2898	-.0787
15.00	.8410	.5928	.3018	-.1718	.2659	-.0564
20.00	1.1241	.7235	.5517	-.2251	.3864	-.0309
.00	.0920	.4549	-.0766	-.1476	.2884	-.1465

PITCH DATA

A = 523

PSI = 0

RUN NUMBER 75

ALPHA	L/Q	D/Q	M/Q	Y/Q	N/Q
.00	.0944	.4500	-.0610	-.1718	.2588
-5.00	-.1162	.4585	-.1185	-.1283	.2555
-4.00	-.0823	.4658	-.1438	-.1258	.2607
-3.00	-.0387	.4689	-.1557	-.1283	.2644
-2.50	-.0315	.4658	-.1109	-.1258	.2625
-1.30	.0508	.4621	-.0982	-.1331	.2525
.00	.0895	.4621	-.0887	-.1355	.2657
1.00	.3388	.4597	.0062	-.1500	.2727
2.00	.1888	.4597	-.0283	-.1573	.2724
.00	.0847	.4573	-.0731	-.1452	.2868

PITCH DATA

A - 523

PSI = 0

RUN NUMBER 76

ALPHA	L/Q	D/Q	M/Q	Y/Q	N/Q
.00	.1041	.4452	-.1109	-.1936	.2783
-20.00	-.9656	.7054	-.3647	-.0920	.1728
-15.00	-.6207	.5831	-.4273	-.0774	.2087
-10.00	-.3606	.4972	-.3000	-.0992	.2710
-7.50	-.2493	.4755	-.2513	-.1186	.2812
-5.00	-.1355	.4634	-.1709	-.1331	.2951
-2.50	-.0266	.4537	-.1364	-.1525	.2976
-1.30	.0460	.4573	-.1406	-.1573	.2810
.00	.0823	.4525	-.1050	-.1549	.2933
2.50	.2009	.4500	-.0508	-.1670	.3174
5.00	.3388	.4525	.0645	-.1670	.3842
7.50	.4392	.4706	.0847	-.1767	.3703
10.00	.5869	.5033	.1324	-.1767	.3235
15.00	.8434	.5928	.2664	-.2057	.3023
20.00	1.1386	.7138	.6248	-.2396	.4248
.00	.1041	.4452	-.0721	-.1549	.3175

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GROUP III

YAW DATA

WIND SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 66

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0169	.4621	.0561	-.1815	.2684	-.0987
2.00	.0024	.4646	.0295	-.0315	.3000	-.0288
4.00	.0000	.4767	.0667	.1307	.3454	.0320
6.00	.0097	.5154	.1182	.2710	.3967	.0645
8.00	.0944	.5589	.2888	.4162	.2058	.0999
10.00	.1283	.6049	.2844	.5518	.2373	.1185
15.00	.0048	.7864	.2678	.9607	.6102	.1700
20.00	-.2420	1.0187	.3275	1.3600	.9216	.1877
25.00	-.6026	1.3406	.3079	1.8005	1.1827	.1374
30.00	-1.0527	1.7157	.3351	2.1635	1.4435	.1656
9.00	.0968	.6001	.2252	.5324	.2861	.0852
5.00	-.0121	.4767	.2685	.2565	.5286	.0361
.00	-.0145	.4670	-.0584	-.1234	.3113	-.1033
7.00	.0532	.5468	.2426	.3678	.3371	.0688
8.00	.0799	.5759	.2504	.4501	.2729	.0853
10.00	.0968	.6146	.2690	.5953	.3048	.1131
.00	.0024	.4670	.0729	-.1162	.3063	-.0852
.00	.0266	.4525	.1034	-.1888	.2564	-.0879
-2.00	.0218	.4646	.1204	-.2807	.1903	-.1671
-4.00	.0218	.4791	.1497	-.4090	.1075	-.2185
-6.00	.0194	.5105	.1942	-.5784	.1587	-.2441
-8.00	.0944	.5952	.2175	-.7066	.2762	-.2995
-10.00	.1428	.6582	.2856	-.8833	.3083	-.3299
-15.00	.1476	.8518	.3152	-1.2850	.1888	-.4248
-20.00	.0000	1.1736	.0339	-1.7884	-.0104	-.4738
-25.00	-.2904	1.5995	-.5904	-2.2724	-.2904	-.5192
-30.00	-.7187	2.0593	-.8096	-2.7419	-.4399	-.5527
-12.00	.1452	.7453	.2564	-1.0648	.2522	-.4052
-5.00	.0266	.5105	.1094	-.4913	.1335	-.2509
-3.00	.0145	.4839	.1205	-.3291	.1380	-.1882
.00	.0121	.4718	.0854	-.1476	.3059	-.1139

WIND SYSTEM

A = 523 ALPHA = -1.3 RUN NUMBER 68

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0242	.4621	.0318	-.1839	.2507	-.0935
2.00	.0073	.4597	.0749	.0121	.3333	-.0504
4.00	.0145	.4742	.0800	.1718	.3996	.0371
6.00	-.0097	.4912	.1426	.2928	.5529	.0495
8.00	-.0242	.5033	.2921	.4477	.5908	.0952
10.00	-.0629	.5589	.1626	.5929	.6712	.0958
15.00	-.1525	.7211	.2388	.9874	.9180	.1376
20.00	-.3533	.9316	.2704	1.3915	1.1466	.1948
25.00	-.6486	1.2801	.2898	1.7932	1.2063	.1472
30.00	-1.0503	1.6479	.2989	2.2143	1.4855	.1448
15.00	-.1476	.7211	.2210	.9922	.9316	.1171
.00	.0145	.4597	.0833	-.1307	.2872	-.0997
.00	.0194	.4573	.0886	-.1428	.2808	-.1026
-2.00	.0145	.4646	.0866	-.2565	.1835	-.1735
-4.00	.0194	.4839	.0833	-.3969	.1185	-.2206
-6.00	.0242	.5105	.1062	-.5881	.1605	-.2738
-8.00	.0073	.5420	.1956	-.7599	.0342	-.2996
-10.00	-.0024	.6001	.1489	-.9317	-.0402	-.3326
-15.00	-.0750	.8082	.2368	-1.3746	-.1185	-.4336
-20.00	-.0460	1.1301	.0470	-1.8126	.0016	-.5015
-25.00	-.3993	1.5632	-.6524	-2.2869	-.2728	-.5606
-30.00	-.8422	2.0376	-.8341	-2.2845	-.3261	-.6856
.00	.0048	.4694	.0651	-.1186	.3007	-.1235

WIND SYSTEM

A = 523

ALPHA = -1.3

RUN NUMBER 70

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0266	.4549	.0681	-.1815	.2249	-.1302
2.00	.0266	.4597	.0400	-.0315	.2685	-.0629
4.00	.0339	.4742	.0523	.1258	.3099	.0127
6.00	.0121	.4936	.1602	.2541	.4680	.0405
8.00	.0557	.5493	.1827	.4090	.3071	.0617
10.00	.1065	.5977	.2235	.5445	.2660	.1039
15.00	.0339	.7719	.2632	.9486	.5787	.1284
20.00	-.2178	1.0163	.3023	1.3431	.8993	.1805
25.00	-.6171	1.3382	.3122	1.7739	1.1892	.1122
30.00	-1.0696	1.7012	.3410	2.1441	1.4406	.1473
7.00	.0218	.5081	.1987	.3436	.4271	.0860
5.00	.0242	.4621	.2254	.2202	.4585	.0530
6.50	.0121	.4960	.1891	.3049	.4807	.0758
.00	.0339	.4525	.0646	-.1500	.2471	-.1160
.00	.0315	.4525	.1001	-.1621	.2432	-.1188
-2.00	.0315	.4621	.1249	-.2831	.1121	-.1665
-4.00	.0387	.4791	.1334	-.4259	.0537	-.2130
-6.00	.0315	.5130	.1555	-.5977	.1113	-.2478
-8.00	.0339	.5565	.1959	-.7115	.0030	-.2966
-10.00	.0968	.6291	.3552	-.8930	.1955	-.3285
-15.00	.1404	.8421	.2797	-1.3383	.2118	-.4434
-20.00	-.0048	1.1470	.0886	-1.8029	.0172	-.5276
-25.00	-.3291	1.5850	-.5983	-2.2579	-.3423	-.5946
-30.00	-.7308	2.0642	-.7673	-2.7443	-.5115	-.5881
-9.00	.0484	.3702	2.2425	-.9801	-.0125	-.3270
-6.00	.0290	.5251	.1334	-.6050	.1110	-.2951
-5.00	.0218	.5057	.1202	-.5058	.0854	-.2753
-7.00	.0290	.5444	.1370	-.6607	.0754	-.2980
.00	.0242	.4621	.0899	-.1500	.2567	-.1498
.00	.0290	.4621	.0697	-.1500	.2664	-.1377
-11.00	.1210	.6824	.2517	-1.0019	.2256	-.3354
.00	.0169	.4646	.0499	-.1621	.2649	-.1527

WIND SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 72

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0339	.4549	.0753	-.1742	.2562	-.1265
2.00	.0436	.4621	.0417	.0024	.2939	-.0856
4.00	.0218	.4839	.0696	.1646	.3322	.0090
6.00	-.0048	.5033	.2050	.2831	.4776	.0703
8.00	.0048	.5299	.2791	.4235	.5093	.0640
10.00	.0460	.5952	.2105	.5760	.4549	.0635
15.00	.0460	.7646	.3267	.9728	.5952	.1162
20.00	-.1791	.9994	.3139	1.3794	.8939	.1534
25.00	-.5881	1.3019	.3290	1.7884	1.1764	.1180
30.00	-1.0575	1.6818	.2803	2.1756	1.4535	.1354
12.00	.0920	.6630	.2376	.7454	.4769	.0614
7.00	-.0097	.5226	.2144	.3775	.5062	.0333
.00	.0218	.4597	.0881	-.1379	.2897	-.0937
.00	.0121	.4621	.2433	-.1307	.2896	-.1070
-2.00	.0145	.4670	.2934	-.2420	.1930	-.1831
-4.00	.0121	.4791	.3330	-.3727	.1409	-.2368
-6.00	.0266	.5130	.3210	-.5614	.1834	-.2563
-8.00	.0387	.5638	.3724	-.7066	.1421	-.2947
-10.00	.0895	.6315	.4410	-.8881	.1872	-.3249
-15.00	.1331	.8469	.4006	-1.3237	.2595	-.4294
-20.00	.0339	1.1446	.1984	-1.8102	.1121	-.5343
-25.00	-.3001	1.5729	-.4257	-2.2772	-.2108	-.5802
-30.00	-.7212	2.0230	-.5817	-2.7467	-.3821	-.6322
.00	.0073	.4694	.2570	-.1210	.2975	-.1110

WIND SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 77

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0218	.4500	.1056	-.1234	.3330	-.0961
.00	.0121	.4500	.1001	-.1186	.3370	-.1017
2.00	.0218	.4549	.0871	.0121	.3889	-.0555
4.00	.0097	.4718	.0798	.1525	.4176	-.0057
6.00	.0121	.4888	.2210	.2662	.5032	.0604
8.00	.1307	.5565	.2993	.4308	.3409	.0886
10.00	.1621	.5952	.2933	.5106	.3617	.1209
15.00	.0678	.7646	.3020	.9172	.7232	.1380
20.00	-.1888	.9921	.3852	1.3262	.9690	.1511
25.00	-.5639	1.3188	.2975	1.7884	1.1980	.1631
30.00	-1.0188	1.6721	.3546	2.1707	1.4555	.2025
.00	.0145	.4694	-.0383	-.1283	.3339	-.1050
.00	.0073	.4549	.0643	-.1258	.3347	-.1005
-2.00	.0145	.4597	.1136	-.2468	.2399	-.1630
-4.00	.0097	.4839	.0899	-.3945	.1750	-.2260
-6.00	.0266	.5081	.1446	-.5639	.1900	-.2510
-8.00	.1113	.5928	.2170	-.7163	.3555	-.3020
-10.00	.1331	.6582	.2414	-.8954	.3674	-.3285
-15.00	.1428	.8639	.2271	-1.3576	.3347	-.4642
-20.00	.0145	1.1664	.0811	-1.8634	.1783	-.5520
-25.00	-.2952	1.6068	-.5813	-2.3498	-.0478	-.6355
-30.00	-.6752	2.0642	-.7566	-2.8120	-.1843	-.7109
-7.00	.0484	.5710	.0218	-.6534	.2824	-.3177
.00	.0073	.4525	.1286	-.1331	.3420	-.1526

WIND SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 79

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0315	.4694	.1051	-.2977	.5723	-.1960
-2.00	.0290	.4863	.0839	-.4235	.4781	-.2454
-4.00	.0436	.5130	.0989	-.5711	.4299	-.3103
-5.00	.0315	.5323	.0914	-.6413	.4285	-.3304
-6.00	.0436	.5493	.1220	-.7212	.4433	-.3434
-7.00	.0629	.5807	.1710	-.7865	.4768	-.3488
-8.00	.1137	.6267	.2447	-.8664	.5531	-.3719
-9.00	.1283	.6630	.2179	-1.0963	.5386	-.3888
-10.00	.1428	.6969	.2808	-1.0358	.5895	-.4310
-12.00	.1621	.7719	.2879	-1.2052	.5669	-.4828
-15.00	.1525	.9050	.3352	-1.4689	.5121	-.5179
-20.00	.0339	1.2390	.0896	-1.9675	.3906	-.5813
-25.00	-.3049	1.689	-.5288	-2.4055	.1548	-.6810
-30.00	-.7429	2.1828	-.7405	-2.8822	-.0510	-.7128
.00	.0242	.4815	.0693	-.2977	.5747	-.2008

WIND SYSTEM

A = 523 ALPHA = -1.3 RUN NUMBER 81

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0315	.5251	.1101	-.4598	.8978	-.3027
-2.00	.0339	.5493	.0466	-.5881	.8046	-.3541
-4.00	.0484	.5759	.1232	-.7284	.7701	-.4031
-5.00	.0460	.6025	.1243	-.8155	.7725	-.4396
-6.00	.0411	.6170	.1920	-.8954	.7968	-.4652
-8.00	.1307	.7090	.2740	-1.0406	.9224	-.5122
-10.00	.1476	.7888	.2814	-1.2003	.9388	-.5637
-12.00	.1718	.8614	.3882	-1.3504	.9291	-.5989
-14.00	.2081	1.0284	.2441	-1.6553	.9023	-.6584
-20.00	.0557	1.3624	.1647	-2.1490	.7966	-.7357
-25.00	-.2493	1.8512	-.4756	-2.5870	.5639	-.8399
-30.00	-.7357	2.3643	-.6712	-3.0298	.3410	-.8353
.00	.0218	.5323	.0690	-.4598	.6534	-.3293
.00	.0387	.5275	.1014	-.4525	.9025	-.3160
2.00	.0363	.5275	.0558	-.2952	.9500	-.2428
4.00	.0242	.5299	.0880	-.1355	.9655	-.1697
5.00	.0145	.5251	.2135	-.0387	1.0550	-.1490
6.00	.0387	.5420	.2456	.0411	.9776	-.1193
8.00	.1089	.5928	.2889	.1960	.7301	-.0464
10.00	.1307	.6267	.2511	.4066	.6669	.0040
15.00	.0290	.7840	.2912	.8639	.7905	.0966
20.00	-.2081	1.0066	.3252	1.2657	1.0757	.1582
30.00	-1.0527	1.6649	.3710	2.0255	1.6922	.0404
.00	.0436	.5251	.1091	-.4501	.8912	-.2970

WIND SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 83

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0508	.6243	.1476	-.6026	1.1617	-.4150
-5.00	.0557	.7066	.2383	-.9559	1.0369	-.5326
-10.00	.1694	.9002	.3902	-1.3552	1.2273	-.6461
-15.00	.1984	1.1422	.3975	-1.7714	1.2214	-.7989
-20.00	.0629	1.4979	.1754	-2.2288	1.0335	-.8357
-30.00	-.6752	2.4780	-.5418	-3.0540	.5822	-.8845
.00	.0581	.6243	.1475	-.6026	1.1617	-.4029

WIND SYSTEM

A = 523 ALPHA = -1.3 RUN NUMBER 84

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0363	.4573	.0348	-.2735	.4785	-.1540
2.00	.0411	.4621	.0215	-.1283	.5279	-.1127
4.00	.0363	.4815	.0211	.0605	.5626	-.0470
5.00	.0411	.4767	.1839	.1476	.6438	-.0252
6.00	.0799	.5226	.1547	.2033	.4503	.0127
8.00	.1283	.5614	.2111	.3727	.3251	.0522
10.00	.1428	.5977	.2374	.5542	.3393	.0785
12.00	.1210	.6606	.1924	.6849	.4044	.1153
15.00	.0387	.7792	.2291	.9099	.6616	.3182
20.00	-.2202	1.0163	.2483	1.3092	.9472	.1742
25.00	-.5711	1.3237	.2201	1.7230	1.2765	.0949
30.00	-1.0551	1.6891	.3059	2.1223	1.5439	.1364
.00	.0363	.4597	.0625	-.2372	.4901	-.1381
.00	.0339	.4549	.0814	-.2420	.4886	-.1349
-2.00	.0387	.4694	.0772	-.3751	.4043	-.1612
-4.00	.0460	.4912	.1386	-.5276	.3451	-.2592
-5.00	.0387	.5154	.1299	-.6219	.3311	-.3091
-6.00	.0363	.5396	.1361	-.6945	.3675	-.3262
-8.00	.0895	.6194	.2217	-.8470	.4507	-.3785
-10.00	.1428	.6872	.3068	-1.0406	.5304	-.4253
-12.00	.1670	.7646	.2838	-1.2366	.5696	-.5185
-15.00	.1791	.9074	.3106	-1.5004	.5530	-.6026
-20.00	.0484	1.2486	.0474	-2.0013	.4471	-.6492
-25.00	-.2444	1.6697	-.5584	-2.4248	.2679	-.7471
-30.00	-.6679	2.1561	-.7942	-2.8556	.0478	-.7680
.00	.0290	.4646	.0574	-.2372	.5095	-.1695

WIND SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 86

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0218	.4718	.0220	-.2493	.5056	-.1289
5.00	.0024	.4694	.2458	.0823	.8042	-.0473
10.00	-.0436	.5614	.1698	.5493	.7955	.0946
15.00	-.1597	.7283	.2131	.9583	1.0524	.1575
20.00	-.3969	.9461	.2902	1.3504	1.2931	.2160
20.00	-.3969	.9461	.2563	1.3504	1.2931	.2160
25.00	-.7018	1.2825	.3262	1.7908	1.3753	.1790
30.00	-1.1592	1.6867	.2831	2.2095	1.5920	.2139
.00	.0315	.4694	.0337	-.2589	.5146	-.1249
-5.00	.0194	.5154	.1164	-.6123	.3027	-.3016
-10.00	.0145	.6388	.1991	-1.0503	.2082	-.4212
-15.00	-.0145	.8421	.2704	-1.5851	.2054	-.5323
-20.00	-.1162	1.1518	.1031	-2.1248	.2196	-.6303
-30.00	-.6292	2.0956	-.5897	-3.0008	.0413	-.7479
-25.00	-.3049	1.6165	-.4686	-2.5531	.1531	-.7127
.00	.0266	.4694	.0781	-.2420	.5007	-.1518

WIND SYSTEM

A = 523

ALPHA = -1.3

RUN NUMBER 90

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0629	.4525	.0219	-.2589	.4347	-.1273
5.00	.0145	.4549	.2191	.1307	.7418	-.0289
10.00	-.0145	.5468	.1412	.5518	.7471	.0780
15.00	-.1283	.6993	.2804	.9462	.9833	.1520
20.00	-.3364	.9171	.3248	1.3818	1.1469	.2018
30.00	-1.1543	1.6479	.2192	2.1998	1.4621	.2438
.00	.0339	.4500	-2.8756	-.2275	.4884	-.1324
-5.00	.0605	.4936	.1056	-.6219	.3196	-.3013
-10.00	.0508	.6025	.2334	-1.0648	.2129	-.3902
-15.00	.0073	.8130	.2040	-1.5706	.1833	-.5111
-20.00	-.1113	1.1204	.0714	-2.0836	.1339	-.6292
-30.00	-.6340	2.0521	-.6948	-2.9476	.0123	-.7476
.00	.0460	.4670	.0107	-.2251	.4843	-.1352

WIND SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 93

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0484	.4379	.1694	-.0726	.0662	-.0124
2.00	.0436	.4525	.1536	.0484	.1150	.0449
4.00	.0315	.4718	.1497	.2009	.2153	.0804
5.00	.0169	.4549	.3288	.2662	.3665	.1014
6.00	-.0024	.4912	.2199	.3267	.4475	.1163
8.00	-.0121	.5105	.3088	.4816	.4882	.1569
10.00	-.0194	.5589	.2805	.6582	.5152	.1868
12.00	-.0557	.6291	.2562	.8252	.5795	.2180
15.00	-.1549	.7332	.3644	1.0745	.7113	.2809
20.00	-.3654	.9534	.4287	1.4956	.8803	.3559
25.00	-.6171	1.2753	.3815	1.9650	.9677	.3546
30.00	-1.1253	1.7375	.3971	2.3813	1.0357	.4395
.00	.0290	.4476	.1674	-.0411	.0933	-.0127
7.00	-.0194	.4960	.3134	.4066	.4878	.1282
.00	.0218	.4500	.1371	-.0315	.1399	-.0094
.00	.0145	.4525	.0680	-.0436	.0998	-.0074
-2.00	.0194	.4500	.1085	-.1283	-.0753	-.0443
-4.00	.0218	.4646	.1458	-.2589	-.2192	-.0929
-5.00	.0266	.4767	.1309	-.3364	-.2710	-.1018
-6.00	.0242	.4888	.1112	-.4114	-.2591	-.1138
-7.00	.0315	.5009	.1163	-.4743	-.3039	-.1273
-8.00	.0290	.5178	.1193	-.5397	-.4029	-.1432
-10.00	.0145	.5541	.1415	-.7333	-.4903	-.1752
-12.00	.0048	.6001	.1657	-.8978	-.5060	-.2311
-15.00	-.0339	.6945	.2410	-1.1955	-.5714	-.3020
-20.00	-.1936	.9897	.0765	-1.6504	-.6987	-.3602
-25.00	-.3582	1.3551	-.6032	-2.0909	-.8385	-.4417
-30.00	-.7187	1.7810	-.8006	-2.5555	-.9750	-.4935
.00	.0121	.4597	.0753	-.0508	.0805	-.0256

WIND SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 95

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0290	.4549	.0520	-.1767	.2700	-.0971
5.00	.0024	.4573	.2671	.1621	.6237	.0026
10.00	-.0290	.5493	.1740	.5590	.6939	.0922
15.00	-.1500	.6945	.2449	.9438	.9265	.1881
20.00	-.3848	.9147	.3043	1.3504	1.1202	.2534
25.00	-.6824	1.2075	.4031	1.8005	1.2736	.2402
30.00	-1.1737	1.6552	.2702	2.2095	1.3643	.2864
7.00	-.0242	.4936	.2092	.2904	.6782	.0457
8.00	-.0387	.5033	.2100	.3727	.6831	.0718
6.00	-.0218	.4839	.1573	.2347	.6623	.0497
3.00	.0073	.4670	.0720	.0242	.4246	-.0404
.00	.0315	.4549	.0866	.0266	.3764	-.1350
-5.00	.0363	.4863	.1382	-.4864	-.0313	-.2199
-10.00	.0339	.5759	.2079	-.8615	-.2465	-.2863
-15.00	-.0315	.7525	.2744	-1.3237	-.3449	-.3874
-20.00	-.1791	1.0792	.0523	-1.7981	-.4603	-.4822
-25.00	-.4380	1.4471	-.5427	-2.2482	-.5918	-.5940
-8.00	.0411	.5517	.0944	-.7091	-.1655	-.3112
-7.00	.0436	.5299	.1208	-.6534	-.0935	-.2671
.00	.0266	.4597	.0993	-.1791	.2643	-.1136

WIND SYSTEM

A = 523 ALPHA = -1.3 RUN NUMBER 96

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0436	.4621	.0864	-.3146	.4144	-.1618
5.00	.0073	.4597	.2528	.0581	.6848	-.0750
10.00	-.0339	.5347	.2242	.4525	.7562	.0565
15.00	-.1525	.6824	.2921	.8446	1.0229	.1076
20.00	-.3920	.8760	.3698	1.2197	1.2339	.1593
25.00	-.6752	1.1494	.3604	1.6625	1.4627	.1237
30.00	-1.2173	1.5753	.3175	2.0764	1.6242	.1554
8.00	.0290	.4960	.2356	.2977	.7436	.0108
7.00	-.0145	.4888	.1956	.2226	.7266	.0103
6.00	-.0024	.4815	.1552	.1379	.7160	-.0151
.00	.0339	.4621	.0882	-.2928	.4505	-.1726
-5.00	.0508	.5130	.1182	-.5929	.1178	-.2748
-10.00	.0461	.6364	.1462	-.9728	-.0528	-.4006
-15.00	-.0073	.8493	.2637	-1.4544	-.1104	-.5045
-20.00	-.1452	1.1422	.1481	-1.9239	-.1737	-.6081
-25.00	-.4041	1.5536	-.5903	-2.3934	-.3001	-.7231
-30.00	-.7696	2.0109	-.7577	-2.8556	-.3814	-.7771
.00	.0290	.4718	.0981	-.2977	.4513	-.1960

WIND SYSTEM

A = 523

ALPHA = -1.3

RUN NUMBER 97

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0242	.4694	.1052	-.2977	.4344	-.1839
2.00	.0484	.4767	.0907	-.1718	.5092	-.1130
3.00	.0169	.4839	.0632	-.1016	.5176	-.0927
4.00	.0024	.4960	.0493	-.0290	.5778	-.0776
5.00	.0169	.4767	.3069	.0411	.6775	-.0507
6.00	.0436	.5299	.2079	.1210	.5743	-.0187
7.00	.1065	.5517	.2690	.1912	.4649	-.0062
8.00	.0968	.5541	.3286	.2686	.4538	.0076
9.00	.1065	.5759	.2733	.3340	.4616	.0444
10.00	.1113	.5904	.2872	.4187	.4775	.0636
15.00	.0242	.7429	.3443	.8083	.7384	.1230
25.00	-.6292	1.2511	.4134	1.6335	1.3229	.1004
30.00	-1.1011	1.6189	.4221	2.0449	1.5886	.1225
.00	.0266	.4694	.0914	-.2952	.4424	-.1698
-2.00	.0387	.4767	.1094	-.3775	.3115	-.2140
-3.00	.0436	.4912	.1040	-.4283	.1980	-.2442
-4.00	.0363	.5057	.1128	-.4985	.1315	-.2642
-5.00	.0508	.5202	.1649	-.5856	.1054	-.2978
-6.00	.0557	.5396	.1313	-.6413	.1231	-.3101
-7.00	.0823	.5686	.1719	-.7139	.1277	-.3284
-8.00	.1355	.6219	.2253	-.7841	.2359	-.3625
-10.00	.1597	.6848	.2736	-.9462	.2458	-.4083
-15.00	.1815	.9074	.2993	-1.4012	.2159	-.5241
-20.00	.0581	1.2244	.1075	-1.8997	.1271	-.6187
-25.00	-.2347	1.6407	-.5537	-2.3377	-.0585	-.6873
-30.00	-.7163	2.0884	-.7357	-2.7612	-.2636	-.7597
.00	.0411	.4767	.0823	-.2952	.4521	-.1843

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 66

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0065	.4624	.0561	-.1815	.2706	-.0926
2.00	-.0081	.4653	.0305	-.0152	.3006	-.0209
4.00	-.0106	.4663	.0643	.1636	.3444	.0444
6.00	-.0013	.4843	.1108	.3234	.3949	.0855
8.00	.0831	.4976	.2721	.4900	.2025	.1437
10.00	.1169	.5027	.2595	.6484	.2335	.1714
15.00	-.0068	.5110	.2147	1.1315	.6048	.2473
20.00	-.2531	.4865	.2436	1.6265	.9149	.3092
25.00	-.6127	.4403	.2209	2.1984	1.1767	.2814
30.00	-1.0616	.3801	.2074	2.7315	1.4361	.3436
9.00	.0852	.5115	.2091	.6197	.2834	.1258
5.00	-.0224	.4521	.2644	.2971	.5271	.0713
.00	-.0251	.4665	-.0584	-.1234	.3135	-.0963
7.00	.0419	.4990	.2324	.4317	.3348	.1054
8.00	.0683	.5093	.2361	.5259	.2702	.1255
10.00	.0854	.5040	.2452	.6930	.3012	.1650
.00	-.0082	.4669	.0729	-.1162	.3082	-.0782
.00	.0163	.4530	.1034	-.1888	.2583	-.0820
-2.00	.0115	.4549	.1145	-.2968	.1941	-.1668
-4.00	.0116	.4498	.1341	-.4414	.1127	-.2260
-6.00	.0092	.4476	.1676	-.6286	.1646	-.2594
-8.00	.0832	.4931	.1737	-.7826	.2836	-.3205
-10.00	.1315	.4979	.2240	-.9842	.3167	-.3674
-15.00	.1365	.4934	.1946	-1.4617	.1999	-.4875
-20.00	-.0111	.4911	-.1302	-2.0819	-.0000	-.4569
-25.00	-.3014	.4826	-.7545	-2.7355	-.2854	-.2276
-30.00	-.7279	.3961	-.9774	-3.4042	-.4381	-.0838
-12.00	.1336	.5108	.1666	-1.1965	.2623	-.4438
-5.00	.0160	.4663	.0871	-.5339	.1393	-.2564
-3.00	.0039	.4662	.1105	-.3540	.1424	-.1911
.00	.0014	.4720	.0854	-.1476	.3084	-.1070

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 68

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0137	.4626	.0318	-.1839	.2528	-.0878
2.00	-.0032	.4591	.0466	.0281	.3343	-.0402
4.00	.0041	.4613	.0772	.2045	.3986	.0516
6.00	-.0201	.4576	.1366	.3426	.5513	.0766
8.00	-.0341	.4354	.2760	.5134	.5876	.1483
10.00	-.0731	.4460	.1435	.6810	.6683	.1378
15.00	-.1624	.4374	.1951	1.1403	.9133	.2155
20.00	-.3623	.3914	.1874	1.6262	1.1401	.3015
25.00	-.6575	.3875	.2004	2.1662	1.2002	.2832
30.00	-1.0573	.2961	.1865	2.7416	1.4789	.3085
15.00	-.1576	.4363	.1831	1.1450	.9275	.1914
.00	.0041	.4599	.0833	-.1307	.2893	-.0932
.00	.0090	.4576	.0886	-.1428	.2831	-.0962
-2.00	.0042	.4555	.0805	-.2726	.1875	-.1722
-4.00	.0090	.4554	.06	-.429	.1236	-.2231
-6.00	.0141	.4467	.0770	-.6382	.1668	-.2797
-8.00	-.0025	.4310	.1520	-.8279	.0415	-.3230
-10.00	-.0122	.4290	.0889	-1.0217	-.0321	-.3542
-15.00	-.0846	.4231	.1165	-1.5369	-.1076	-.4827
-20.00	-.0560	.4408	-.1274	-2.0898	.0127	-.4872
-25.00	-.4094	.4411	-.8283	-2.7333	-.2675	-.2385
-30.00	-.9561	.6031	-1.0651	-2.9972	-.3220	-.1841
.00	-.0058	.4694	.0651	-.1186	.3034	-.1166

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 70

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0163	.4554	.0681	-.1815	.2277	-.1251
2.00	.0162	.4610	.0422	-.0154	.2698	-.0554
4.00	.0233	.4650	.0513	.1586	.3094	.0233
6.00	.0016	.4645	.1551	.3043	.4666	.0677
8.00	.0446	.4881	.1723	.4814	.3050	.0934
10.00	.0952	.4963	.2020	.6400	.2628	.1472
15.00	.0225	.5007	.2210	1.1161	.5741	.2053
20.00	-.2290	.4906	.2223	1.6097	.8929	.2934
25.00	-.6274	.4490	.2356	2.1732	1.1836	.2606
30.00	-1.0785	.3768	.2217	2.7075	1.4335	.3306
7.00	.0113	.4628	.1867	.4030	.4245	.1193
5.00	.0142	.4416	.2199	.2597	.4567	.0829
6.50	.0017	.4585	.1793	.3591	.4784	.1076
.00	.0236	.4531	.0646	-.1500	.2496	-.1103
.00	.0212	.4531	.1001	-.1621	.2458	-.1133
-2.00	.0212	.4526	.1190	-.2991	.1159	-.1682
-4.00	.0285	.4490	.1182	-.4583	.0587	-.2205
-6.00	.0213	.4483	.1288	-.6481	.1172	-.2601
-8.00	.0236	.4527	.1527	-.7820	.0102	-.3208
-10.00	.0862	.4666	.2927	-.9887	.2042	-.3806
-15.00	.1297	.4701	.1554	-1.5106	.2231	-.4958
-20.00	-.0153	.4610	-.0972	-2.0865	.0291	-.5256
-25.00	-.3400	.4747	-.7935	-2.7162	-.3357	-.2937
-30.00	-.7401	.3988	-.9585	-3.4087	-.5085	-.1373
-9.00	.0436	.2134	2.1638	-1.0259	.0028	-.6739
-6.00	.0186	.4595	.1019	-.6566	.1179	-.3048
-5.00	.0113	.4601	.0958	-.5479	.0918	-.2827
-7.00	.0186	.4604	.0997	-.7221	.0825	-.3106
.00	.0137	.4626	.0899	-.1500	.2601	-.1440
.00	.0185	.4627	.0697	-.1500	.2695	-.1317
-11.00	.1101	.4813	.1830	-1.1137	.2341	-.3720
.00	.0064	.4648	.0499	-.1621	.2683	-.1467

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 72

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0236	.4555	.0753	-.1742	.2590	-.1207
2.00	.0331	.4627	.0446	.0185	.2958	-.0774
4.00	.0111	.4716	.0688	.1979	.3318	.0214
6.00	-.0155	.4707	.1966	.3342	.4754	.1021
8.00	-.0057	.4658	.2674	.4931	.5068	.1137
10.00	.0349	.4871	.1963	.6706	.4526	.1094
15.00	.0349	.4877	.2855	1.1376	.5906	.2103
20.00	-.1896	.4632	.2424	1.6380	.8880	.2717
25.00	-.5975	.4107	.2483	2.1710	1.1705	.2726
30.00	-1.0656	.3446	.1750	2.7250	1.4473	.2903
12.00	.0807	.4955	.2196	.8669	.4742	.1202
7.00	-.0204	.4724	.2087	.4384	.5047	.0707
.00	.0113	.4601	.0881	-.1379	.2917	-.0871
.00	.0016	.4623	.2433	-.1307	.2919	-.1004
-2.00	.0041	.4585	.2868	-.2582	.1973	-.1888
-4.00	.0018	.4521	.3157	-.4052	.1468	-.2562
-6.00	.0164	.4520	.2924	-.6120	.1899	-.2842
-8.00	.0283	.4607	.3278	-.7782	.1499	-.3404
-10.00	.0789	.4696	.3779	-.9843	.1962	-.3922
-15.00	.1223	.4784	.2758	-1.4978	.2712	-.5125
-20.00	.0235	.4571	.0037	-2.0925	.1250	-.5672
-25.00	-.3105	.4562	-.6311	-2.7286	-.2029	-.3506
-30.00	-.7296	.3622	-.8198	-3.3902	-.3762	-.2652
.00	-.0034	.4695	.2570	-.1210	.3000	-.1042

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 77

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0116	.4504	.1056	-.1234	.3351	-.0885
.00	.0019	.4502	.1001	-.1186	.3392	-.0940
2.00	.0115	.4546	.0890	.0280	.3900	-.0435
4.00	-.0008	.4601	.0800	.1850	.4175	.0094
6.00	.0017	.4584	.2135	.3158	.5011	.0945
8.00	.1195	.4940	.2840	.5040	.3379	.1371
10.00	.1508	.5011	.2678	.6062	.3577	.1781
15.00	.0564	.5026	.2560	1.0838	.7182	.2278
20.00	-.1996	.4743	.3103	1.5855	.9625	.2956
25.00	-.5737	.4266	.2007	2.1782	1.1915	.3007
30.00	-1.0268	.3395	.2058	2.7160	1.4471	.3856
.00	.0039	.4696	-.0383	-.1283	.3362	-.0974
.00	-.0031	.4549	.0643	-.1258	.3369	-.0929
-2.00	.0043	.4510	.1078	-.2627	.2436	-.1613
-4.00	-.0007	.4553	.0739	-.4273	.1802	-.2277
-6.00	.0165	.4469	.1176	-.6139	.1960	-.2604
-8.00	.1002	.4898	.1729	-.7919	.3629	-.3211
-10.00	.1219	.4956	.1807	-.9961	.3756	-.3570
-15.00	.1318	.4862	.0992	-1.5349	.3461	-.4995
-20.00	.0041	.4589	-.1126	-2.1499	.1907	-.5422
-25.00	-.3057	.4564	-.7954	-2.8087	-.0403	-.3313
-30.00	-.6837	.3662	-1.0107	-3.4674	-.1788	-.2415
-7.00	.0373	.4881	-.0171	-.7181	.2896	-.3115
.00	-.0030	.4525	.1286	-.1331	.3454	-.1448

BODY SYSTEM

A = 523 ALPHA = -1.3 RUN NUMBER 79

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0208	.4700	.1051	-.2977	.5766	-.1830
-2.00	.0183	.4718	.0753	-.4402	.4837	-.2373
-4.00	.0328	.4727	.0771	-.6055	.4370	-.3066
-5.00	.0207	.4750	.0623	-.6853	.4360	-.3273
-6.00	.0329	.4717	.0855	-.7746	.4513	-.3442
-7.00	.0520	.4819	.1272	-.8514	.4850	-.3561
-8.00	.1024	.5025	.1906	-.9451	.5621	-.3897
-9.00	.1173	.4861	.1544	-1.1865	.5479	-.4057
-10.00	.1313	.5096	.2017	-1.1410	.6000	-.4597
-12.00	.1507	.5080	.1812	-1.3393	.5788	-.5191
-15.00	.1412	.4973	.1897	-1.6531	.5253	-.5753
-20.00	.0227	.4920	-.1146	-2.2726	.4036	-.5679
-25.00	-.3165	.5072	-.7671	-2.8939	.1637	-.3901
-30.00	-.7529	.4323	-.9977	-3.5875	-.0454	-.2482
.00	.0133	.4819	.0693	-.2977	.5792	-.1877

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 81

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0195	.5256	.1101	-.4598	.9044	-.2823
-2.00	.0219	.5290	.0642	-.6069	.8124	-.3382
-4.00	.0365	.5246	.0947	-.7668	.7793	-.3932
-5.00	.0340	.5300	.0856	-.8649	.7825	-.4311
-6.00	.0293	.5209	.1424	-.9550	.8076	-.4645
-8.00	.1180	.5601	.2000	-1.1291	.9345	-.5242
-10.00	.1347	.5716	.1792	-1.3191	.9523	-.5825
-12.00	.1590	.5656	.2552	-1.5000	.9440	-.6453
-14.00	.1945	.6020	.0776	-1.8549	.9179	-.6772
-20.00	.0433	.5464	-.0969	-2.4853	.8134	-.7294
-25.00	-.2625	.5787	-.7860	-3.1270	.5765	-.5473
-30.00	-.7476	.5158	-.9989	-3.8061	.3497	-.3799
.00	.0097	.5327	.0690	-.4598	.6607	-.3144
.00	.0267	.5282	.1014	-.4525	.9095	-.2954
2.00	.0241	.5382	.0642	-.2767	.9642	-.2189
4.00	.0120	.5385	.0997	-.0982	.9689	-.1412
5.00	.0026	.5266	.2257	.0072	1.0577	-.1058
6.00	.0266	.5355	.2567	.0976	.9794	-.0708
8.00	.0962	.5621	.2925	.2766	.7301	.0108
10.00	.1182	.5494	.2466	.5092	.6656	.0627
15.00	.0169	.5342	.2562	1.0374	.7865	.1866
20.00	-.2197	.5082	.2515	1.5336	1.0696	.2842
30.00	-1.0622	.4051	.3011	2.5866	1.6868	.2588
.00	.0316	.5259	.1091	-.4501	.8977	-.2767

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 83

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0366	.6253	.1476	-.6026	1.1708	-.3886
-5.00	.0416	.6217	.1910	-1.0138	1.0491	-.5277
-10.00	.1546	.6548	.2720	-1.4909	1.2429	-.6761
-15.00	.1838	.6491	.1772	-2.0067	1.2409	-.8466
-20.00	.0483	.6465	-.1210	-2.6067	1.0524	-.8216
-30.00	-.6890	.6035	-.9114	-3.8839	.5933	-.4818
.00	.0439	.6254	.1475	-.6026	1.1705	-.3765

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 84

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0259	.4580	.0348	-.2735	.4818	-.1431
2.00	.0305	.4672	.0254	-.1121	.5303	-.0999
4.00	.0255	.4768	.0244	.0939	.5635	-.0326
5.00	.0306	.4628	.1854	.1886	.6438	.0056
6.00	.0685	.5002	.1525	.2568	.4495	.0390
8.00	.1168	.5068	.2018	.4472	.3232	.0884
10.00	.1316	.4955	.2201	.6495	.3365	.1262
12.00	.1095	.5064	.1642	.8072	.4009	.1619
15.00	.0270	.5179	.1390	1.0806	.6531	.3816
20.00	-.2317	.5021	.1738	1.5779	.9413	.2701
25.00	-.5817	.4584	.1593	2.1210	1.2721	.2079
30.00	-1.0640	.3776	.1967	2.6825	1.5374	.3060
.00	.0259	.4604	.0625	-.2372	.4931	-.1269
.00	.0236	.4555	.0814	-.2420	.4915	-.1238
-2.00	.0284	.4568	.0715	-.3913	.4079	-.1546
-4.00	.0357	.4541	.1202	-.5605	.3511	-.2603
-5.00	.0283	.4600	.1025	-.6645	.3383	-.3117
-6.00	.0258	.4647	.1012	-.7471	.3751	-.3303
-8.00	.0783	.4974	.1669	-.9250	.4598	-.3954
-10.00	.1315	.4992	.2283	-1.1441	.5410	-.4600
-12.00	.1558	.4945	.1698	-1.3686	.5823	-.5531
-15.00	.1680	.4921	.1441	-1.6841	.5679	-.6497
-20.00	.0373	.4898	-.1775	-2.3077	.4612	-.6160
-25.00	-.2554	.4828	-.8218	-2.9033	.2779	-.4349
-30.00	-.6777	.4242	-1.0718	-3.5511	.0538	-.2669
.00	.0185	.4651	.0574	-.2372	.5132	-.1579

BODY SYSTEM

A = 523 ALPHA = -1.3 RUN NUMBER 86

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0111	.4722	.0220	-.2493	.5084	-.1173
5.00	-.0080	.4604	.2490	.1229	.8046	-.0075
10.00	-.0539	.4563	.1508	.6385	.7925	.1406
15.00	-.1700	.4518	.1651	1.1142	1.0474	.2311
20.00	-.4065	.4181	.1988	1.5925	1.2859	.3315
20.00	-.4065	.4181	.1670	1.5925	1.2862	.3199
25.00	-.7108	.3895	.2199	2.1650	1.3682	.3312
30.00	-1.1670	.3296	.1382	2.7568	1.5842	.3629
.00	.0208	.4700	.0337	-.2589	.5173	-.1132
-5.00	.0089	.4604	.0897	-.6548	.3097	-.3036
-10.00	.0044	.4469	.1229	-1.1453	.2183	-.4446
-15.00	-.0237	.4027	.1234	-1.7490	.2186	-.5793
-20.00	-.1242	.3529	-.1187	-2.3906	.2338	-.6224
-30.00	-.6362	.3001	-.8846	-3.6466	.0493	-.3518
-25.00	-.3136	.3790	-.7259	-2.9971	.1632	-.4443
.00	.0160	.4699	.0781	-.2420	.5040	-.1404

BODY SYSTEM

A = 523 ALPHA = -1.3 RUN NUMBER 90

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0526	.4538	.0219	-.2589	.4375	-.1174
5.00	.0045	.4420	.2208	.1698	.7419	.0071
10.00	-.0246	.4423	.1255	.6383	.7446	.1183
15.00	-.1380	.4276	.2315	1.0950	.9780	.2416
20.00	-.3451	.3815	.2362	1.6122	1.1398	.3266
30.00	-1.1615	.3010	.0679	2.7290	1.4544	.3538
.00	.0237	.4507	-2.8756	-.2275	.4913	-.1213
-5.00	.0506	.4388	.0789	-.6626	.3265	-.3020
-10.00	.0415	.4095	.1621	-1.1532	.2224	-.4199
-15.00	-.0013	.3789	.0647	-1.7275	.1957	-.5421
-20.00	-.1190	.3376	-.1481	-2.3412	.1478	-.6125
-30.00	-.6408	.2889	-.9755	-3.5787	.0191	-.2997
.00	.0354	.4679	.0107	-.2251	.4873	-.1242

BODY SYSTEM

A - 523

ALPHA = -1.3

RUN NUMBER 93

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0385	.4389	.1694	-.0726	.0665	-.0109
2.00	.0333	.4514	.1519	.0642	.1138	.0528
4.00	.0211	.4573	.1437	.2333	.2132	.0955
5.00	.0072	.4302	.3187	.3048	.3635	.1380
6.00	-.0127	.4542	.2065	.3763	.4443	.1488
8.00	-.0220	.4382	.2839	.5479	.4835	.2094
10.00	-.0293	.4356	.2438	.7453	.5098	.2443
12.00	-.0657	.4424	.2053	.9380	.5733	.2796
15.00	-.1646	.4265	.2492	1.2276	.7028	.3817
20.00	-.3740	.3760	.2811	1.7315	.8692	.5009
25.00	-.6243	.3112	.1959	2.3199	.9565	.5044
30.00	-1.1321	.2885	.1241	2.9310	1.0223	.6025
.00	.0189	.4482	.1674	-.0411	.0935	-.0105
7.00	-.0294	.4422	.2954	.4640	.4839	.1765
.00	.0116	.4504	.1371	-.0315	.1401	-.0062
.00	.0043	.4527	.0680	-.0436	.0999	-.0052
-2.00	.0093	.4456	.1068	-.1439	-.0741	-.0497
-4.00	.0117	.4458	.1390	-.2907	-.2168	-.1078
-5.00	.0165	.4460	.1215	-.3766	-.2684	-.1190
-6.00	.0141	.4435	.0987	-.4602	-.2562	-.1306
-7.00	.0215	.4399	.0010	-.5318	-.3006	-.1474
-8.00	.0191	.4382	.0982	-.6065	-.3992	-.1675
-10.00	.0050	.4186	.1089	-.8183	-.4857	-.2081
-12.00	-.0042	.4003	.1141	-1.0030	-.5000	-.2720
-15.00	-.0421	.3605	.1546	-1.3345	-.5632	-.3670
-20.00	-.2018	.3611	-.0513	-1.8894	-.6903	-.3804
-25.00	-.3659	.3363	-.7334	-2.4677	-.8350	-.1644
-30.00	-.7246	.2483	-.9401	-3.1037	-.9741	-.0492
.00	.0017	.4599	.0753	-.0508	.0810	-.0238

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 95

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0187	.4554	.0520	-.1767	.2721	-.0910
5.00	-.0076	.4414	.2659	.2014	.6229	.0400
10.00	-.0391	.4431	.1553	.6459	.6909	.136[illegible]
15.00	-.1597	.4230	.1879	1.0914	.9207	.266[illegible]
20.00	-.3937	.3888	.1993	1.5818	1.1122	.3675
25.00	-.6898	.3179	.2638	2.1421	1.2645	.4168
30.00	-1.1809	.3020	.0908	2.7411	1.3553	.4140
7.00	-.0345	.4539	.2020	.3484	.6764	.0862
8.00	-.0488	.4455	.1980	.4391	.6806	.1158
6.00	-.0321	.4561	.1512	.2840	.6607	.0808
3.00	-.0033	.4651	.0741	.0486	.4253	-.0269
.00	.0211	.4555	.0866	.0266	.3794	-.1264
-5.00	.0263	.4428	.1185	-.5270	-.0260	-.2318
-10.00	.0244	.4182	.1550	-.9484	-.2392	-.3236
-15.00	-.0402	.3835	.1648	-1.4734	-.3347	-.4530
-20.00	-.1881	.3950	-.1158	-2.0587	-.4495	-.4814
-25.00	-.4461	.3514	-.7429	-2.6491	-.5847	-.3223
-8.00	.0310	.4485	.0502	-.7789	-.1581	-.3249
-7.00	.0334	.4472	.0873	-.7131	-.0871	-.2819
.00	.0162	.4602	.0993	-.1791	.2669	-.1076

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 96

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0331	.4630	.0864	-.3146	.4180	-.1523
5.00	-.0030	.4530	.2584	.0979	.6859	-.0371
10.00	-.0440	.4472	.2109	.5385	.7538	.1117
15.00	-.1624	.4370	.2543	.9924	1.0186	.2027
20.00	-.4011	.3970	.2931	1.4457	1.2273	.3041
25.00	-.6827	.3237	.2744	1.9925	1.4563	.2975
30.00	-1.2243	.2984	.1973	2.5859	1.6171	.3301
8.00	.0188	.4503	.2319	.3638	.7424	.0603
7.00	-.0249	.4575	.1929	.2805	.7256	.0506
6.00	-.0130	.4643	.1559	.1875	.7158	.0174
.00	.0234	.4628	.0882	-.2928	.4543	-.1623
-5.00	.0404	.4604	.0938	-.6354	.1242	-.2813
-10.00	.0356	.4587	.0745	-1.0686	-.0432	-.4210
-15.00	-.0173	.4437	.1242	-1.6247	-.0977	-.5580
-20.00	-.1546	.4119	-.0688	-2.1985	-.1595	-.6258
-25.00	-.4130	.3873	-.8406	-2.8257	-.2908	-.4125
-30.00	-. 65	.2962	-1.0448	-3.4 85	-.3 4	-.302
.00	.0183	.4724	.0981	-.2977	.4557	-.1857

BODY SYSTEM

A - 523 ALPHA = -1.3 RUN NUMBER 97

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	.0135	.4698	.1052	-.2977	.4384	-.1740
2.00	.0374	.4833	.0946	-.1551	.5116	-.0981
3.00	.0059	.4888	.0680	-.0762	.5195	-.0775
4.00	-.0089	.4968	.0546	.0056	.5793	-.0609
5.00	.0062	.4715	.3101	.0825	.6778	-.0084
6.00	.0319	.5152	.2088	.1757	.5741	.0161
7.00	.0946	.5266	.2677	.2570	.4642	.0371
8.00	.0852	.5134	.3243	.3431	.4525	.0636
9.00	.0947	.5188	.2630	.4199	.4595	.0970
10.00	.0997	.5111	.2718	.5148	.4748	.1233
15.00	.0127	.5088	.3007	.9730	.7335	.2246
25.00	-.6391	.4291	.3322	2.0092	1.3165	.2956
30.00	-1.1094	.3545	.3043	2.5804	1.5810	.3531
.00	.0160	.4699	.0914	-.2952	.4462	-.1597
-2.00	.0282	.4640	.1018	-.3939	.3164	-.2106
-3.00	.0320	.4690	.0910	-.4535	.2036	-.2447
-4.00	.0256	.4704	.0941	-.5326	.1376	-.2683
-5.00	.0402	.4682	.1383	-.6288	.1124	-.3085
-6.00	.0450	.4707	.0982	-.6942	.1304	-.3192
-7.00	.0714	.4791	.1306	-.7779	.1355	-.3439
-8.00	.1240	.5096	.1727	-.8630	.2447	-.3849
-10.00	.1481	.5136	.1985	-1.0508	.2559	-.4439
-15.00	.1698	.5178	.1534	-1.5683	.2291	-.5787
-20.00	.0467	.5021	-.1106	-2.2039	.1411	-.6151
-25.00	-.2460	.4936	-.7923	-2.8121	-.0497	-.3902
-30.00	-.7258	.4116	-1.0170	-3.4355	-.2569	-.2960
.00	.0303	.4775	.0823	-.2952	.4562	-.1740

WIND SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 67

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.0805	.7162	.9188	-.2299	.4326	-.0404
2.00	1.1277	.7162	.9197	-.0145	.4273	-.0523
4.00	1.0696	.7308	.8108	.2096	.5941	-.0268
6.00	1.0225	.7743	.7134	.4646	.6278	-.0206
8.00	1.0128	.8397	.7973	.5663	.5066	-.0146
10.00	1.0140	.8856	.6197	.7187	.4757	-.0495
15.00	.9111	1.0308	.4258	1.3020	.6769	-.0162
20.00	.7720	1.2656	.1340	1.9263	.9344	.0342
25.00	.6716	1.5971	-.3086	2.5301	1.1772	.1512
30.00	.3799	2.0158	-.7578	3.0661	1.4844	.4130
5.00	1.0459	.7574	.7031	.3098	.5747	.0146
.00	1.0878	.7162	.9068	-.1960	.4423	-.0270
.00	1.0902	.7211	.8766	-.1863	.3683	-.0564
-2.00	1.0938	.7489	.7191	-.4380	.2198	-.0533
-4.00	1.0648	.7888	.6798	-.6887	.0414	-.1115
-8.00	1.0721	.9437	.3036	-.8954	.2402	-.0363
-6.00	1.0394	.8348	.6834	-.8809	.0227	-.0634
-10.00	1.0721	.9873	.3056	-1.1132	.1629	-.0372
-15.00	.9801	1.2148	-.1930	-1.6795	-.0623	-.0465
-20.00	.8373	1.5729	-1.0244	-2.4127	-.2719	-.1012
-25.00	.5106	2.0400	-2.2583	-3.1654	-.5116	-.1365
-30.00	.0641	2.6982	-5.9503	-3.8212	-.7543	-.4916
-9.00	1.0672	.9776	.2681	-1.0333	.1990	.0039
-7.00	1.0091	.9244	.2966	-.9680	.1042	.0052
-5.00	1.0418	.8179	.7116	-.8252	.0477	-.0984
.00	1.0975	.7283	.8494	-.1742	.3848	-.0568
-4.00	1.0551	.8082	.6703	-.6936	.0901	-.1164
-6.00	1.0128	.8445	.6697	-.9390	.0912	-.0745
.00	1.0805	.7211	.9046	-.2033	.4107	-.0195
.00	1.0830	.7235	.8681	-.1791	.4266	-.0664
-2.00	1.0817	.7392	.7601	-.4187	.2849	-.0396
-3.00	1.0745	.7622	.7460	-.5663	.2102	-.0762
-4.00	1.0600	.7816	.6981	-.6839	.1184	-.0803
-5.00	1.0491	.8034	.7060	-.8155	.1001	-.0670
-6.00	1.0128	.8276	.6795	-.9317	.0968	-.0481
-7.00	1.0091	.9147	.3395	-.9123	.1801	-.0136
-8.00	1.0454	.9486	.3139	-.9365	.2907	.0316
-9.00	1.0721	.9631	.3850	-1.0358	.2595	.0285
-10.00	1.0769	.9945	.3477	-1.1398	.2014	.0001
.00	1.0830	.7187	.9210	-.1888	.4425	-.0128

WIND SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 69

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.0854	.7162	.9229	-.2009	.4140	-.0341
10.00	.9051	.8324	.5391	1.1301	1.0096	.0591
15.00	.8458	.9994	.4507	1.4302	.7692	.0628
20.00	.7308	1.2414	.1573	2.0231	.9712	.0576
25.00	.6280	1.5608	-.2658	2.6124	1.1887	.1550
30.00	.2880	1.9819	-.7595	3.1339	1.4800	.4271
12.00	.8059	.8784	.5112	1.4084	1.1447	.0820
14.00	.8724	.9607	.4479	1.3528	.8295	.0732
.00	1.0878	.7066	.9570	-.2154	.4184	-.0288
13.00	.7877	.9195	.4568	1.4447	1.0722	.0991
.00	1.0878	.7066	.9570	-.1863	.4337	-.0177
-2.00	1.0793	.7489	.8010	-.4840	.2541	-.0253
-4.00	1.0503	.7937	.7209	-.7613	.0928	-.0851
-6.00	1.0273	.8179	.7276	-1.0309	.0279	-.0514
-8.00	1.0043	.8953	.3733	-1.2294	.0249	-.0595
-10.00	.9728	.9437	.3234	-1.5972	-.1891	-.0991
-15.00	.8906	1.1688	-.1169	-1.7835	-.1497	-.1262
-20.00	.7526	1.5269	-.8901	-2.4781	-.3221	-.1214
-25.00	.4404	2.0255	-2.2676	-3.2622	-.5069	-.0881
-30.00	-.0109	2.6861	-5.9755	-3.9567	-.7483	-.4955

WIND SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 71

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.1023	.7235	.8653	-.2057	.3493	-.0896
2.00	1.1350	.7235	.8586	.0000	.3696	-.0941
4.00	1.0842	.7429	.7575	.2386	.5637	-.0596
5.00	1.0459	.7598	.6900	.3194	.5806	-.0196
6.00	1.0273	.7719	.6823	.4767	.6659	-.0358
7.00	.9849	.7816	.8462	.6195	.7094	-.0404
8.00	.9571	.8058	.7076	.7671	.7504	-.0164
9.00	.9970	.8445	.6460	.7393	.6139	-.0163
10.00	1.0091	.8784	.5873	.7308	.4819	-.0423
11.00	.9970	.9026	.5290	.8083	.4936	-.0649
12.00	.9511	.9195	.5490	.9172	.5279	-.0641
15.00	.8942	1.0066	.4619	1.2826	.6220	-.0527
20.00	.7599	1.2680	.1651	1.9650	.9187	.0295
25.00	.6377	1.5850	-.2127	2.5253	1.1690	.1299
30.00	.3243	2.0109	-.7246	3.0903	1.4910	.3495
3.00	1.1132	.7308	.7929	.1331	.5054	-.0691
2.50	1.1277	.7138	.8928	.0673	.4442	-.0587
1.00	1.1023	.7090	.9357	-.0920	.3490	-.0981
.00	1.0975	.7090	.9473	-.1960	.3649	-.0730
.00	1.0999	.7211	.8607	-.1936	.3657	-.0852
-1.00	1.1144	.7332	.7855	-.2989	.3227	-.0939
-2.00	1.1132	.7489	.7309	-.4017	.2618	-.0979
-3.00	1.0817	.7646	.6968	-.5687	.1730	-.1268
-4.00	1.0842	.7816	.6777	-.7154	.0491	-.1464
-5.00	1.0757	.7864	.7544	-.8494	.0401	-.1425
-6.00	1.0539	.8130	.6908	-.9898	.0137	-.1293
-7.00	1.0164	.8808	.3472	-1.1253	-.0176	-.0930
-8.00	1.0261	.9026	.3222	-1.2003	-.0038	-.0618
-9.00	1.0672	.9413	.3129	-1.1568	.0606	-.0595
-10.00	1.0842	.9631	.3615	-1.1568	.1393	-.0640
-11.00	1.0878	1.0018	.3169	-1.2245	.1421	-.0547
-12.00	1.0660	1.0357	.2508	-1.3237	.1026	-.0632
-15.00	.9874	1.1906	-.1291	-1.6771	-.0350	-.0629
-20.00	.8373	1.5536	-.9966	-2.4273	-.2841	-.1200
-20.00	.8373	1.5536	-.9409	-2.4273	-.2841	-.1200
-25.00	.5082	2.0400	-2.2422	-3.1944	-.5041	-.1431
-30.00	.0424	2.6837	-5.8152	-3.8647	-.7338	-.5013
.00	1.0902	.7283	.8928	-.2299	.4326	-.0307

WIND SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 73

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
6.00	1.0346	.7792	.7277	.4380	.6184	-.0323
8.00	.9862	.8227	.7856	.6703	.6346	-.0435
10.00	.9753	.8760	.5546	.8301	.6257	-.0267
15.00	.8990	1.0260	.3826	1.3455	.6818	-.0359
20.00	.7526	1.2680	.0610	1.9747	.9219	-.0014
25.00	.6353	1.5705	-.2967	2.5495	1.1625	.1198
30.00	.3194	1.9843	-.7460	3.0855	1.4630	.3796
12.00	.9317	.9123	.5357	.9898	.6472	-.0967
.00	1.0660	.7114	.9447	-.2251	.4392	-.0672
-2.00	1.0624	.7344	.8110	-.4453	.3190	-.0704
-4.00	1.0358	.7792	.7172	-.7008	.1342	-.1045
-6.00	1.0128	.8179	.7539	-.9656	.0609	-.0663
.00	1.0612	.7114	.9599	-.2251	.4319	-.0357
.00	1.0830	.7138	.9304	-.2299	.4205	-.0501
-2.00	1.0914	.7368	.8203	-.4501	.3076	-.0553
-4.00	1.0624	.7792	.7267	-.6936	.1247	-.1017
-6.00	1.0321	.8203	.7307	-.9583	.0658	-.0755
-8.00	1.0285	.9244	.3305	-1.0624	.1166	-.0278
-10.00	1.0333	.9728	.3442	-1.2536	.0755	-.0444
-12.00	1.0249	1.0405	.2706	-1.4544	.0468	-.0399
-15.00	.9462	1.1857	-.1292	-1.7472	-.0879	-.0521
-20.00	.8059	1.5318	-.9420	-2.4539	-.2952	-.0866
-25.00	.4477	2.0158	-2.2610	-3.1992	-.4608	-.1037
-30.00	-.0085	2.6764	-5.9415	-3.9083	-.7170	-.5040
.00	1.0757	1.0647	-1.2843	-.2226	.4352	-.0092
2.00	1.1253	.7259	.8662	-.0024	.4511	-.0406
4.00	1.0696	.7453	.7755	.1830	.5583	-.0259
.00	1.0830	.7308	.8673	-.2130	.4387	-.0216
6.00	1.0297	.7816	.7249	.4477	.6220	-.0130
.00	1.0830	.7259	.8985	-.2130	.4459	-.0192

WIND SYSTEM

A = 523 ALPHA = 20.0 RUN NUMBER 78

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.1217	.7114	.8775	-.2323	.5019	-.0718
2.00	1.1616	.7138	.8458	-.0073	.4927	-.0845
4.00	1.0721	.7356	.7225	.2096	.6160	-.0607
6.00	1.0346	.7695	.6835	.4380	.6762	-.0492
8.00	1.0104	.8155	.7659	.5711	.6571	-.0389
10.00	1.0551	.8760	.5755	.6945	.5730	-.0415
12.00	1.0019	.9195	.4991	.9075	.6116	-.0458
15.00	.9426	1.0212	.3513	1.3044	.6768	-.0410
20.00	.8180	1.2559	.0448	1.9336	.8679	.0162
25.00	.7006	1.5560	-.3297	2.5301	1.0887	.1323
30.00	.4501	2.0061	-.7754	3.0928	1.3820	.3922
9.00	1.0237	.8542	.6028	.6353	.5776	-.0747
7.00	.9922	.7961	.7481	.5639	.7096	-.0703
.00	1.0975	.7114	.8689	-.2710	.5800	-.0268
.00	1.0951	.7138	.8476	-.2541	.5691	-.0371
-2.00	1.1035	.7392	.7292	-.4961	.4556	-.0536
-4.00	1.0769	.7816	.6921	-.7759	.2670	-.0864
-6.00	1.0563	.8276	.6854	-.9995	.2130	-.0804
-7.00	1.0430	.9098	.3174	-1.0140	.2748	-.0618
-8.00	1.0817	.9486	.2808	-1.0212	.3841	-.0121
-9.00	1.0987	.9655	.3280	-1.1035	.3951	-.0064
-10.00	1.1059	1.0018	.2701	-1.2294	.3654	-.0190
-12.00	1.0951	1.0913	.1013	-1.4689	.2751	-.0196
-15.00	1.0067	1.2123	-.2166	-1.7714	.1408	-.0529
-25.00	.5808	2.0497	-2.2954	-3.2646	-.2815	-.1369
-30.00	.1174	2.7248	-5.0203	-3.9446	-.5070	-.5770
-12.00	1.0757	1.0841	.1485	-1.4399	.2931	-.0898
-5.00	1.0491	.8130	.6825	-.9365	.2405	-.0531
.00	1.0951	.7162	.8949	-.2759	.5541	-.0291
.00	1.0926	.7090	.8996	-.2831	.5442	-.0264
2.00	1.1326	.7090	.8786	-.0557	.5552	-.0437
4.00	1.0745	.7235	.7915	.1684	.6905	-.0255
6.00	1.0442	.7671	.6759	.4211	.7184	-.0369
7.00	.9970	.7985	.7633	.5421	.7334	-.0334
8.00	1.0200	.8324	.7232	.6123	.6508	-.0166
.00	1.0902	.7114	.8905	-.2662	.5575	-.0391

WIND SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 80

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.0709	.7404	.9217	-.3703	.7453	.0008
-2.00	1.0672	.7610	.7963	-.6002	.6310	-.0190
-3.00	1.0648	.7864	.7466	-.7284	.5244	-.0514
-4.00	1.0551	.8251	.6315	-.8509	.4424	-.0601
-5.00	1.0394	.8324	.7674	-.9825	.4171	-.0422
-6.00	1.0128	.8663	.7062	-1.0817	.4000	-.0308
-7.00	1.0091	.9413	.4248	-1.0793	.4608	-.0126
-8.00	1.0575	.9752	.3889	-1.0866	.5484	.0447
-9.00	1.0793	1.0018	.3756	-1.1616	.5516	.0357
-10.00	1.0672	1.0308	.3648	-1.2681	.5266	.0235
-12.00	1.0515	1.1059	.2927	-1.5101	.4629	.0149
-20.00	.8373	1.6310	-.9407	-2.5676	.0875	-.0474
-25.00	.5009	2.1174	-2.2201	-3.2985	-.0971	-.0631
-30.00	.0061	2.7926	-5.8617	-3.9906	-.3447	-.4284
.00	1.0781	.7404	.9388	-.3799	.7467	-.0134

WIND SYSTEM

A = 523 ALPHA = 20.0 RUN NUMBER 82

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.0709	.8106	.9323	-.5493	1.1167	-.0002
-5.00	1.0467	.9292	.7327	-1.1422	.7709	-.0267
-10.00	1.0672	1.1349	.3800	-1.4326	.9218	.0317
-15.00	.9801	1.3914	-.1343	-2.0255	.7405	-.0223
-20.00	.8252	1.7883	-.9648	-2.7394	.5452	-.0574

WIND SYSTEM

A = 523 ALPHA = 20.0 RUN NUMBER 83

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
-.00	1.0370	.8977	.9041	-.6558	1.3569	.0277
-5.00	1.0225	1.0163	.8266	-1.2778	1.0174	-.0130
-10.00	1.0503	1.2607	.3581	-1.5851	1.2087	.0432
-15.00	.9486	1.5124	-.0575	-2.1393	1.0215	.0320
-20.00	.8034	1.9383	-1.0325	-2.8483	.8290	-.0320
-30.00	.0206	3.1362	-5.9413	-4.1818	.3331	-.4263
-.00	1.0539	.8905	.9762	-.6800	1.3579	.0262

WIND SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 85

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.1241	.7550	.9236	-.3073	.7945	.0422
2.00	1.1664	.7550	.9506	-.0678	.8491	.0483
4.00	1.0914	.7816	.8243	.1733	.9865	.0417
5.00	1.0750	.8009	.7284	.2831	1.0094	.0703
6.00	1.0563	.8155	.7427	.4429	1.1007	.0418
8.00	.9692	.8639	.7665	.7236	1.1904	.0547
10.00	1.0575	.9244	.5819	.7260	.9986	.0008
12.00	1.0140	.9607	.5774	.9462	.9259	-.0166
15.00	.9499	1.0575	.4421	1.3407	.9614	.0539
20.00	.7913	1.3116	.1181	2.0352	1.1703	.0256
25.00	.6982	1.6383	-.2452	2.6148	1.3755	.1467
30.00	.3920	2.0666	-.8004	3.1968	1.6502	.4280
7.00	1.0019	.8276	.8843	.6098	1.1702	.0318
.00	1.1314	.7477	.9560	-.2904	.8296	.0731
.00	1.1289	.7550	.8769	-.2952	.7238	.0224
-2.00	1.1156	.7707	.7441	-.5566	.6199	.0043
-4.00	1.1108	.8082	.7434	-.8291	.4216	-.0498
-5.00	1.0902	.8276	.7901	-.9535	.3574	-.0392
-6.00	1.0636	.8663	.7207	-1.0600	.3207	-.0224
-8.00	1.0866	.9897	.3832	-1.0866	.4750	.0268
-10.00	1.1156	1.0454	.3671	-1.2705	.4353	.0145
-12.00	1.0926	1.1180	.2825	-1.5246	.3431	.0039
-15.00	.9922	1.2583	-.2368	-1.8392	.1857	-.0277
-20.00	.8494	1.6358	-.9508	-2.6281	-.0568	-.0534
-25.00	.5518	2.1271	-2.2877	-3.3154	-.2081	-.0597
-30.00	.0496	2.8289	-5.9172	-4.0511	-.3627	-.4475
.00	1.1265	.7598	.8594	-.3073	.7267	.0494

WIND SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 89

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.1386	.7646	.8568	-.2952	.7020	.0151
5.00	1.0653	.7888	.7569	.3436	1.0282	.0636
10.00	.9220	.8687	.5172	1.0600	1.3162	.1138
15.00	.8579	1.0260	.2860	1.4544	1.1938	.1189
15.00	.8579	1.0260	.4288	1.5198	1.1269	.1167
20.00	.7333	1.2607	-.0125	2.0836	1.1779	.0891
20.00	.7333	1.2607	.1424	2.0667	1.1722	.0897
30.00	.2928	1.9940	-.6181	3.3057	1.6032	.4565
30.00	.2928	2.0472	-.7671	3.3057	1.6128	.4565
.00	1.1386	.7550	.9046	-.3073	.7485	.0446
-5.00	1.1047	.8276	.7952	-1.0309	.3225	-.0505
-10.00	.9995	.9994	.3074	-1.7521	.0262	-.0606
-15.00	.8397	1.2027	-.1443	-2.3813	-.2871	-.1270
-15.00	.8397	1.2123	-.2212	-2.3571	-.2917	-.1859
-20.00	.7938	1.5850	-.9112	-2.6838	-.1468	-.1672
-30.00	-.0424	2.7999	-5.8654	-4.1382	-.3869	-.5190
.00	1.1241	.7671	.8554	-.2880	.7409	.0536

WIND SYSTEM

A = 523 ALPHA = 20.0 RUN NUMBER 91

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.1362	.7671	.8960	-.2952	.6851	.0539
5.00	1.1960	.7888	.8229	.3533	.9856	.0883
10.00	.9365	.8711	.4269	1.1301	1.2467	.1201
15.00	.8894	.7961	1.9312	1.5343	1.0453	.1350
20.00	.7429	1.2753	.0885	2.1248	1.0822	.1034
30.00	.3436	2.0642	-.8506	3.3469	1.4543	.4896
.00	.1101	.7622	.5281	-.2928	.7150	.0780
-5.00	1.1168	.8251	.7764	-1.0164	.3181	-.0410
-10.00	1.0140	.9824	.3707	-1.5294	.1107	-.0529
-15.00	.9269	1.2220	-.1444	-2.0255	-.0061	-.1289
-20.00	.7962	1.5947	-.9702	-2.7007	-.1392	-.1228
-30.00	-.0206	2.7684	-5.8570	-4.1358	-.4217	-.4813
.00	1.1338	.7743	.8460	-.3001	.7221	.0589

WIND SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 94

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.1265	.7332	.9714	-.0218	.1539	-.0113
5.00	1.0774	.7840	.7996	.6098	.4406	.0491
10.00	.9486	.9002	.5492	1.3479	.7688	.0827
15.00	.8240	1.0768	.3563	1.8392	.8308	.1474
20.00	.7671	1.3212	.0742	2.2409	.7736	.1666
20.00	.7671	1.3212	.1057	2.2409	.7736	.1666
30.00	.3509	2.1513	-1.0315	3.4848	1.1279	.5270
.00	1.1314	.7380	.9444	-.0387	.1502	-.0083
-5.00	1.0975	.7840	.8116	-.7333	-.2838	-.1168
-10.00	1.0019	.9219	.3431	-1.4714	-.5451	-.1307
-15.00	.9027	1.1083	-.0210	-1.7303	-.6218	-.1826
-20.00	.7889	1.4495	-.9265	-2.3643	-.8914	-.2153
-30.00	-.0593	2.5191	-5.8599	-3.7897	-1.3804	-.6382
-25.00	.4090	1.9117	-2.3566	-3.0855	-1.1584	-.2757
.00	1.1289	.7380	.9412	-.0290	.1464	-.0450
3.00	1.1253	.7574	.8655	.3557	.3121	-.0190
7.00	.9995	.8324	.8293	.9099	.5826	.0408
25.00	.6449	1.6842	-.4108	2.8738	.9390	.2352
.00	1.1289	.7332	.9650	-.0242	.1675	-.0064

BODY SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 67

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.2603	.3035	.9188	-.2299	.3927	-.1859
2.00	1.3047	.2874	.9210	.0105	.3946	-.1651
4.00	1.2495	.3054	.8107	.2600	.5685	-.1752
6.00	1.2076	.3283	.7116	.5430	.6084	-.1639
8.00	1.2091	.3609	.7916	.6776	.5090	-.0826
10.00	1.2085	.3555	.6189	.8616	.4672	-.1073
15.00	1.0815	.3074	.4155	1.5244	.6684	-.1427
20.00	.9068	.2344	.1142	2.2430	.9047	-.2463
25.00	.7604	.1257	-.3436	2.9680	1.1085	-.3964
30.00	.4298	.0699	-.8628	3.6632	1.3876	-.5277
5.00	1.2317	.3259	.6992	.3746	.5659	-.1253
.00	1.2672	.3010	.9068	-.1960	.4064	-.1767
.00	1.2711	.3047	.8766	-.1863	.3268	-.1790
-2.00	1.2786	.3148	.7168	-.4639	.1797	-.1488
-4.00	1.2533	.3301	.6703	-.7421	-.0153	-.1632
-8.00	1.2844	.3944	.2956	-1.0180	.1990	-.1556
-6.00	1.2292	.3382	.6731	-.9633	-.0247	-.1342
-10.00	1.2738	.3653	.2945	-1.2677	.1224	-.1400
-15.00	1.1736	.3589	-.1985	-1.9367	-.0568	.0260
-20.00	1.0101	.3271	-.9972	-2.8052	-.1682	.3329
-25.00	.6546	.3057	-2.1044	-3.7309	-.1966	.9556
-30.00	.2060	.3785	-5.3989	-4.6584	.1631	2.6536
-9.00	1.2778	.3904	.2654	-1.1735	.1740	-.1038
-7.00	1.2217	.4061	.2950	-1.0734	.0874	-.0647
-5.00	1.2331	.3417	.7004	-.8934	-.0099	-.1667
.00	1.2804	.3091	.8494	-.1742	.3421	-.1850
-4.00	1.2507	.3513	.6606	-.7483	.0289	-.1839
-6.00	1.2054	.3506	.6583	-1.0221	.0364	-.1666
.00	1.2620	.3080	.9046	-.2033	.3792	-.1588
.00	1.2651	.3095	.8681	-.1791	.3782	-.2083
-2.00	1.2642	.3105	.7583	-.4442	.2451	-.1596
-3.00	1.2599	.3199	.7410	-.6054	.1581	-.1801
-4.00	1.2464	.3253	.6908	-.7367	.0672	-.1615
-5.00	1.2352	.3265	.6975	-.8825	.0501	-.1548
-6.00	1.1999	.3355	.6708	-1.0131	.0503	-.1448
-7.00	1.2208	.4035	.3354	-1.0170	.1505	-.1132
-8.00	1.2591	.4026	.3152	-1.0594	.2690	-.1111
-9.00	1.2773	.3749	.3847	-1.1737	.2329	-.1189
-10.00	1.2792	.3661	.3442	-1.2952	.1720	-.1164
.00	1.2634	.3049	.9210	-.1888	.4114	-.1633

BODY SYSTEM

A = 523 ALPHA = 20.0 RUN NUMBER 69

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.2649	.3018	.9229	-.2009	.3773	-.1737
10.00	1.0638	.2764	.5206	1.2575	1.0006	-.2026
15.00	.9983	.2700	.4191	1.6401	.7834	-.0964
20.00	.8491	.1960	.1281	2.3257	.9496	-.2308
25.00	.6963	.0770	-.3064	3.0273	1.1267	-.3802
30.00	.3217	.0419	-.8713	3.7050	1.3873	-.5155
12.00	.9510	.2566	.4830	1.5603	1.1394	-.2163
14.00	1.0267	.2700	.4169	1.5450	.8408	-.1151
.00	1.2638	.2919	.9570	-.2154	.3834	-.1702
13.00	.9355	.2671	.4229	1.6146	1.0757	-.1794
.00	1.2638	.2919	.9570	-.1863	.4015	-.1650
-2.00	1.2644	.3183	.7997	-.5098	.2206	-.1369
-4.00	1.2396	.3349	.7132	-.8148	.0410	-.1588
-6.00	1.2067	.3117	.7183	-1.1108	-.0172	-.1290
-8.00	1.1885	.3289	.3613	-1.3420	-.0145	-.1127
-10.00	1.1372	.2800	.3013	-1.7368	-.2303	-.0798
-15.00	1.0651	.3225	-.1455	-2.0253	-.1720	-.0349
-20.00	.9081	.2945	-.3779	-2.8509	-.2376	.2891
-25.00	.5702	.2788	-2.0923	-3.8125	-.1759	.9989
-30.00	.1088	.3306	-5.4227	-4.7697	.1720	2.6603

BODY SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 71

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.2833	.3029	.8653	-.2057	.2976	-.2037
2.00	1.3138	.2913	.8614	.0253	.3254	-.1866
4.00	1.2665	.3099	.7598	.2899	.5274	-.1990
5.00	1.2322	.3274	.6891	.3844	.5595	-.1604
6.00	1.2109	.3232	.6823	.5548	.6379	-.1941
7.00	1.1650	.3212	.8448	.7102	.6882	-.1834
8.00	1.1358	.3221	.7030	.8718	.7333	-.1794
9.00	1.1826	.3341	.6406	.8623	.6059	-.1302
10.00	1.2007	.3485	.5857	.8723	.4735	-.1082
11.00	1.1872	.3466	.5317	.9657	.4766	-.1339
12.00	1.1361	.3407	.5504	1.0883	.5136	-.1322
15.00	1.0593	.2959	.4598	1.4994	.6079	-.1482
20.00	.8917	.2282	.1451	2.2802	.8920	-.2351
25.00	.7255	.1289	-.2477	2.9585	1.1080	-.3736
30.00	.3719	.0736	-.8023	3.6818	1.3807	-.5660
3.00	1.2933	.2985	.7955	.1712	.4655	-.1987
2.50	1.3026	.2817	.8945	.0983	.4107	-.1704
1.00	1.2788	.2906	.9373	-.0796	.3000	-.1962
.00	1.2738	.2909	.9473	-.1960	.3179	-.1934
.00	1.2802	.3014	.8607	-.1936	.3145	-.2052
-1.00	1.2961	.3028	.7838	-.3116	.2665	-.2115
-2.00	1.2973	.3094	.7270	-.4276	.2038	-.2055
-3.00	1.2675	.3196	.6892	-.6079	.1068	-.2125
-4.00	1.2684	.3150	.6659	-.7681	-.0200	-.1984
-5.00	1.2534	.2987	.7391	-.9147	-.0334	-.2089
-6.00	1.2315	.3022	.6735	-1.0693	-.0558	-.1934
-7.00	1.2072	.3450	.3333	-1.2243	-.0626	-.1205
-8.00	1.2128	.3320	.3104	-1.3143	-.0399	-.0983
-9.00	1.2590	.3386	.299	-1.2898	.0201	-.1220
-10.00	1.2745	.3317	.3449	-1.3064	.0879	-.1659
-11.00	1.2786	.3325	.3006	-1.3932	.0945	-.1559
-12.00	1.2541	.3287	.2322	-1.5101	.0575	-.1422
-15.00	1.1727	.3351	-.1410	-1.9281	-.0422	-.0137
-20.00	1.0022	.3053	-.9775	-2.8122	-.1889	.3115
-20.00	1.0022	.3053	-.9252	-2.8122	-.1954	.2936
-25.00	.6482	.2949	-2.0926	-3.7572	-.1939	.9410
-30.00	.1738	.3537	-5.2867	-4.6888	.1564	2.5753
.00	1.2736	.3115	.8928	-.2299	.3960	-.1768

BODY SYSTEM

A = 523 ALPHA = 20.0 RUN NUMBER 73

P<I	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
6.00	1.2215	.3313	.7271	.5171	.5962	-.1702
8.00	1.1734	.3406	.7840	.7783	.6190	-.1548
10.00	1.1622	.3416	.5508	.9696	.6119	-.1482
15.00	1.0647	.2965	.3788	1.5652	.6627	-.1728
20.00	.8838	.2276	.0579	2.2893	.8730	-.2970
25.00	.7152	.1078	-.3195	2.9743	1.0866	-.4134
30.00	.3603	.0559	-.8358	3.6643	1.3596	-.5419
12.00	1.1103	.3265	.5441	1.1578	.6139	-.2056
.00	1.2450	.3039	.9447	-.2251	.3897	-.2133
-2.00	1.2440	.3117	.8080	-.4706	.2660	-.2018
-4.00	1.2224	.3302	.7081	-.7535	.0733	-.1909
-6.00	1.1954	.3231	.7429	-1.0458	.0077	-.1568
.00	1.2405	.3056	.9599	-.2251	.3937	-.1813
.00	1.2618	.3004	.9304	-.2299	.3780	-.1909
-2.00	1.2721	.3039	.8179	-.4756	.2603	-.1841
-4.00	1.2476	.3216	.7178	-.7462	.0651	-.1856
-6.00	1.2146	.3195	.7188	-1.0388	.0100	-.1649
-8.00	1.2290	.3695	.3234	-1.1807	.0844	-.1090
-10.00	1.2242	.3422	.3313	-1.4034	.0356	-.1231
-12.00	1.2077	.3217	.2564	-1.6390	.0114	-.1055
-15.00	1.1262	.3277	-.1383	-1.9946	-.0884	.0142
-20.00	.9625	.2883	-.9149	-2.8298	-.1950	.3272
-25.00	.5831	.2931	-2.0930	-3.7514	-.1384	.9672
-30.00	.1164	.3447	-5.3975	-4.7229	.1930	2.6267
.00	1.3750	.6326	-1.2843	-.2226	.4058	-.1575
2.00	1.3056	.2969	.8671	.0229	.4203	-.1640
4.00	1.2551	.3208	.7754	.2345	.5343	-.1644
.00	1.2676	.3163	.8673	-.2130	.4048	-.1703
6.00	1.2175	.3343	.7223	.5269	.6060	-.1537
.00	1.2659	.3118	.8985	-.2130	.4125	-.1705

BODY SYSTEM

A = 523 ALPHA = 20.0 RUN NUMBER 78

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.2973	.2849	.8775	-.2323	.4471	-.2391
2.00	1.3356	.2733	.8482	.0177	.4443	-.2201
4.00	1.2534	.3092	.7249	.2604	.5754	-.2203
6.00	1.2182	.3223	.6849	.5161	.6431	-.2101
8.00	1.1984	.3386	.7638	.6791	.6408	-.1607
10.00	1.2453	.3364	.5740	.8361	.5587	-.1405
12.00	1.1846	.3252	.4977	1.0788	.5949	-.1538
15.00	1.1076	.2873	.3500	1.5242	.6536	-.1832
20.00	.9461	.2078	.0365	2.2465	.8260	-.2681
25.00	.7749	.0808	-.3547	2.9506	1.0164	-.3906
30.00	.4883	.0255	-.8676	3.6815	1.2822	-.5178
9.00	1.2165	.3493	.6070	.7611	.5498	-.1783
7.00	1.1791	.3386	.7511	.6567	.6741	-.2226
.00	1.2746	.2931	.8689	-.2710	.5358	-.2236
.00	1.2732	.2962	.8476	-.2541	.5221	-.2295
-2.00	1.2837	.3005	.7269	-.5216	.4011	-.2301
-4.00	1.2601	.3135	.6844	-.8285	.2049	-.2177
-6.00	1.2384	.3139	.6732	-1.0805	.1483	-.2153
-7.00	1.2467	.3757	.3075	-1.1173	.2240	-.1880
-8.00	1.2892	.3792	.2764	-1.1433	.3435	-.1793
-9.00	1.2995	.3581	.3230	-1.2410	.3516	-.1893
-10.00	1.3037	.3482	.2627	-1.3846	.3209	-.1866
-12.00	1.2897	.3416	.0950	-1.6637	.2447	-.1319
-15.00	1.1897	.3253	-.2229	-2.0249	.1340	-.0435
-25.00	.7092	.2505	-2.1382	-3.8249	.0248	.8913
-30.00	.2428	.3240	-5.5023	-4.7785	.3822	2.5325
-12.00	1.2711	.3472	.1266	-1.6338	.2348	-.2118
-5.00	1.2349	.3256	.6752	-1.0038	.1875	-.1879
.00	1.2740	.2985	.8949	-.2759	.5107	-.2168
.00	1.2692	.2925	.8996	-.2831	.5024	-.2110
2.00	1.3073	.2803	.8796	-.0309	.5173	-.2021
4.00	1.2525	.2997	.7913	.2185	.6591	-.2082
6.00	1.2271	.3184	.6761	.4990	.6867	-.2138
7.00	1.1854	.3417	.7617	.6354	.7097	-.1946
8.00	1.2113	.3457	.7185	.7222	.6404	-.1434
.00	1.2678	.2956	.8905	-.2662	.5105	-.2274

BODY SYSTEM

A - 523

ALPHA = 20.0

RUN NUMBER 80

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.2595	.3295	.9217	-.3703	.7006	-.2541
-2.00	1.2558	.3300	.7951	-.6264	.5770	-.2597
-3.00	1.2 2	.3380	. 428	-. 8	.4 19	-.2 43
-4.00	1.2527	.3568	.6257	-.9064	.3801	-.2490
-5.00	1.2310	.3433	.7608	-1.0513	.3547	-.2450
-6.00	1.2077	.3569	.6992	-1.1664	.3402	-.2350
-7.00	1.2228	.4092	.4201	-1.1860	.4110	-.2180
-8.00	1.2723	.4037	.3513	-1.2117	.5119	-.1968
-9.00	1.2905	.3899	.3765	-1.3040	.5103	-.2107
-10.00	1.2748	.3820	.3633	-1.4278	.4811	-.2179
-12.00	1.2507	.3618	.2894	-1.7070	.4191	-.2018
-20.00	1.0107	.3286	-.9002	-2.9706	.1771	.2306
-25.00	.6503	.3221	-2.0388	-3.8843	.2101	.8611
-30.00	.1504	.3956	-5.2906	-4.8522	.5517	2.5234
.00	1.2663	.3271	.9388	-.3799	.6971	-.2679

BODY SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 82

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.2835	.3955	.9323	-.5493	1.0493	-.3821
-5.00	1.2661	.4183	.7276	-1.2189	.6934	-.3486
-10.00	1.3000	.4515	.3798	-1.6079	.8544	-.3480
-15.00	1.2014	.4351	-.1355	-2.3166	.7004	-.2409
-20.00	1.0298	.4164	-.9262	-3.1859	.6068	.0729

BODY SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 83

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
-.00	1.2815	.4889	.9041	-.6558	1.2845	-.4380
-5.00	1.2690	.4971	.8223	-1.3615	.9270	-.4279
-10.00	1.3174	.5488	.3601	-1.7799	1.1291	-.4318
-15.00	1.2017	.5280	-.0472	-2.4578	.9755	-.3064
-20.00	1.0448	.5214	-.9812	-3.3395	.8895	.0200
-30.00	.2332	.5805	-5.3585	-5.1896	1.2027	2.3306
-.00	1.2949	.4763	.9762	-.6800	1.2850	-.4399

BODY SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 85

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.3145	.3250	.9236	-.3073	.7610	-.2321
2.00	1.3550	.3123	.9483	-.0414	.8258	-.2139
4.00	1.2881	.3480	.8194	.2274	.9609	-.2443
5.00	1.2746	.3589	.7195	.3519	.9942	-.2198
6.00	1.2542	.3573	.7342	.5257	1.0751	-.2645
8.00	1.1689	.3778	.7515	.8368	1.1736	-.2560
10.00	1.2620	.3753	.5730	.8755	.9732	-.2458
12.00	1.2069	.3513	.5682	1.1253	.9056	-.2191
15.00	1.1232	.3089	.4131	1.5687	.9603	-.1724
20.00	.9271	.2334	.1022	2.3611	1.1217	-.3397
25.00	.7859	.1180	-.2842	3.0622	1.3026	-.4429
30.00	.4338	.0457	-.9072	3.8018	1.5406	-.5921
7.00	1.1970	.3594	.8738	.7061	1.1473	-.2693
.00	1.3189	.3157	.9560	-.2904	.8045	-.2151
.00	1.3191	.3233	.8769	-.2952	.6878	-.2265
-2.00	1.3051	.3240	.7438	-.5832	.5751	-.2323
-4.00	1.2998	.3234	.7382	-.8835	.3614	-.2396
-5.00	1.2780	.3237	.7836	-1.0220	.2990	-.2236
-6.00	1.2562	.3417	.7144	-1.1447	.2680	-.2014
-8.00	1.3045	.4072	.3832	-1.2137	.4372	-.1877
-10.00	1.3250	.3785	.3640	-1.4327	.3921	-.1953
-12.00	1.2923	.3560	.2771	-1.7237	.3037	-.1689
-15.00	1.1853	.3555	-.2359	-2.1022	.1863	-.0311
-20.00	1.0165	.3093	-.9118	-3.0291	.0406	.2778
-25.00	.6986	.3062	-2.0986	-3.9037	.1166	.9289
-30.00	.1918	.3818	-5.3482	-4.9228	.5386	2.5401
.00	1.3184	.3287	.8594	-.3073	.6998	-.2021

BODY SYSTEM

A = .523 ALPHA = 20.0 RUN NUMBER 89

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.3315	.3291	.8568	-.2952	.6649	-.2259
5.00	1.2596	.3460	.7484	.4111	1.0104	-.2301
10.00	1.0961	.3156	.4896	1.1947	1.3059	-.2605
15.00	1.0164	.2841	.2455	1.6704	1.1865	-.2308
15.00	1.0106	.2682	.3840	1.7335	1.1355	-.1752
20.00	.8505	.1928	-.0422	2.3892	1.1340	-.3282
20.00	.8525	.1983	.1031	2.3732	1.1470	-.2760
30.00	.3005	.0306	-.7635	3.8598	1.5361	-.4672
30.00	.3162	.0127	-.8926	3.8865	1.5195	-.5405
.00	1.3282	.3200	.9046	-.3073	.7186	-.2141
-5.00	1.2893	.3124	.7878	-1.0991	.2621	-.2227
-10.00	1.1717	.2971	.2922	-1.8990	-.0140	-.1152
-15.00	.9756	.2253	-.1723	-2.6114	-.2990	.0180
-15.00	.9810	.2399	-.2617	-2.5905	-.3160	-.0152
-20.00	.9414	.2656	-.9134	-3.0640	-.0851	.1954
-30.00	.0818	.3487	-5.3391	-4.9837	.4857	2.4658
.00	1.3187	.3363	.8554	-.2880	.7146	-.2030

BODY SYSTEM

A - 523 ALPHA = 20.0 RUN NUMBER 91

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.3300	.3322	.8960	-.2952	.6622	-.1837
5.00	1.3821	.3005	.8120	.4207	.9808	-.1871
10.00	1.1064	.3014	.3995	1.2642	1.2374	-.2456
15.00	.9629	.0453	1.8304	1.6880	1.1978	.2347
20.00	.8594	.1891	.0478	2.4328	1.0605	-.2504
30.00	.3620	.0102	-.9815	3.9306	1.3661	-.4987
.00	.3642	.6786	.5281	-.2928	.6985	-.1713
-5.00	1.3003	.3072	.7699	-1.0844	.2618	-.2107
-10.00	1.1929	.3128	.3559	-1.6768	.0642	-.1473
-15.00	1.0954	.2996	-.1728	-2.2728	-.0355	-.0798
-20.00	.9448	.2679	-.9537	-3.0833	-.0567	.2510
-30.00	.0934	.3168	-5.3130	-4.9659	.4628	2.5045
.00	1.3302	.3399	.8460	-.3001	.6986	-.1916

BODY SYSTEM

A - 523

ALPHA = 20.0

RUN NUMBER 94

PSI	L/Q	D/Q	M/Q	Y/Q	N/Q	OMEGA/Q
.00	1.3093	.3037	.9714	-.0218	.1407	-.0633
5.00	1.2614	.3155	.7923	.6759	.4546	-.0392
10.00	1.1146	.2886	.5265	1.4838	.7829	-.0968
15.00	.9673	.2483	.3060	2.0552	.8609	-.0637
20.00	.8834	.1841	.0128	2.5577	.7892	-.0936
20.00	.8834	.1841	.0424	2.5577	.7929	-.0835
30.00	.3710	.0066	-1.1568	4.0936	1.0396	-.4415
.00	1.3155	.3066	.9444	-.0387	.1383	-.0592
-5.00	1.2766	.2985	.7983	-.7988	-.3307	-.0787
-10.00	1.1646	.2704	.3152	-1.6091	-.5766	.0095
-15.00	1.0612	.2764	-.0676	-1.9582	-.6427	.0520
-20.00	.9306	.2502	-.9442	-2.7175	-.7985	.4126
-30.00	.0424	.2898	-5.3939	-4.5416	-.4841	2.7060
-25.00	.5309	.2629	-2.2523	-3.6043	-.8333	1.0973
.00	1.3133	.3074	.9412	-.0290	.1222	-.0923
3.00	1.3098	.3084	.8653	.3949	.3023	-.0820
.00	1.1838	.3303	.8181	1.0046	.5959	-.0663
25.00	.7127	.0726	-.4717	3.3163	.8959	-.2840
.00	1.3116	.3029	.9650	-.0242	.1552	-.0633